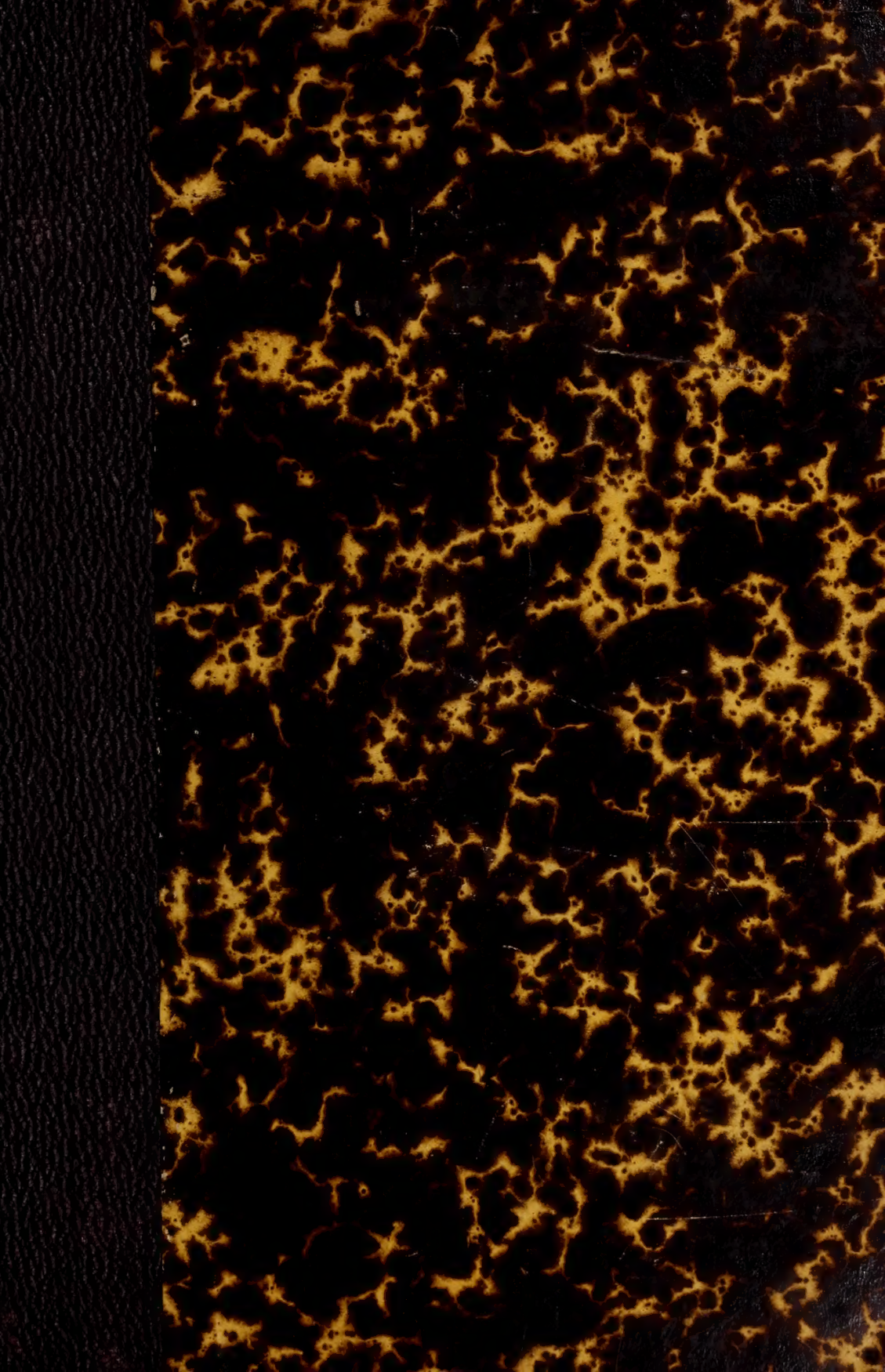
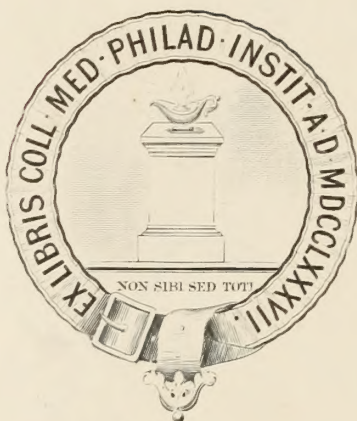


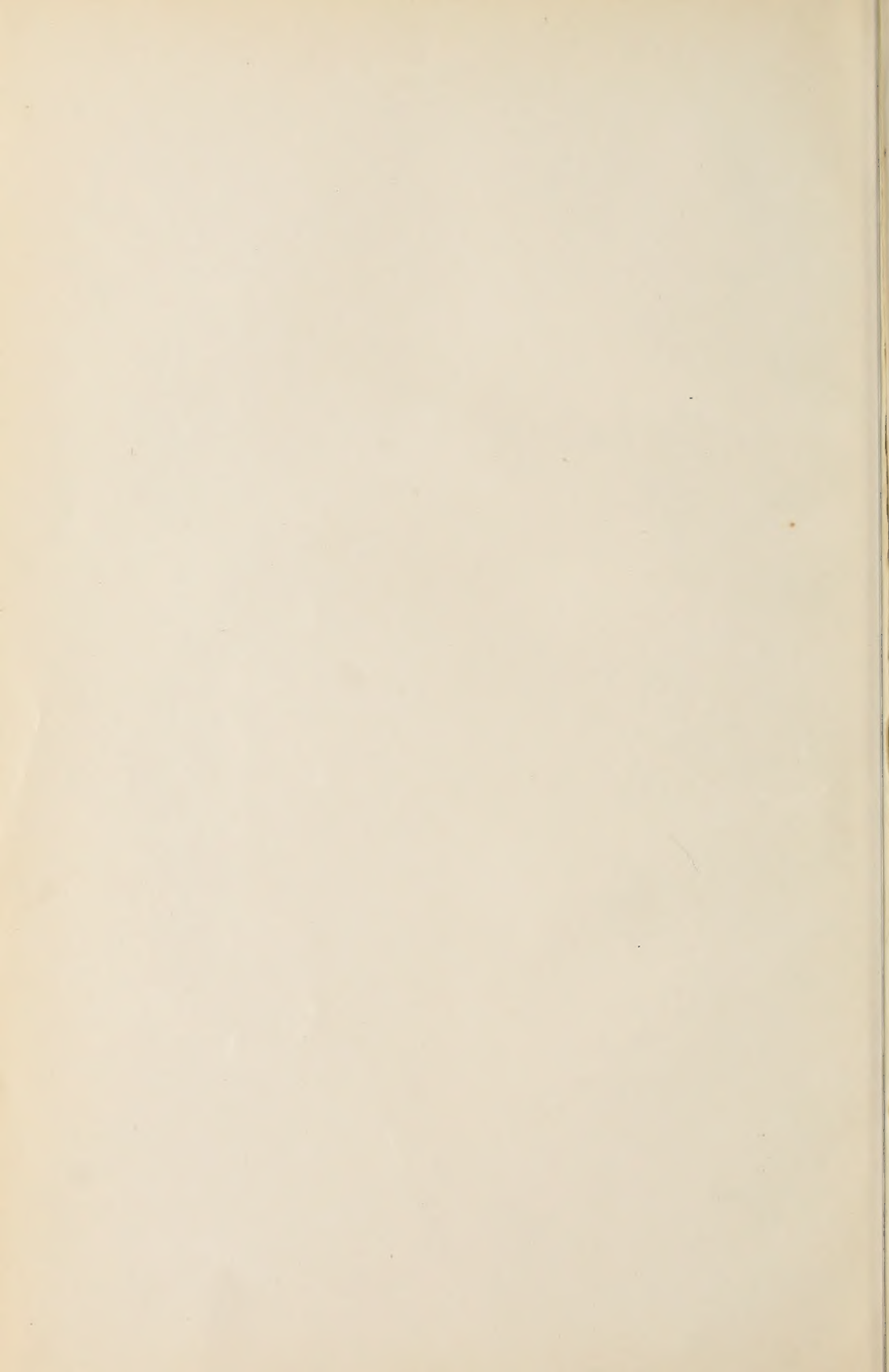


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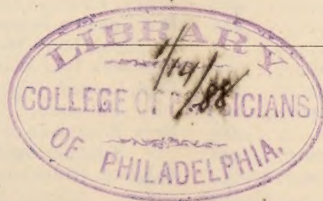
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Communications.

ON THE HYGIENIC LAWS AND SANITARY CONDITIONS OF ANCIENT ROME.*

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After describing in my last lecture the humble origin of Rome, and the simple matter-of-fact causes which led to its foundation on the Palatine Hill; after showing by the evidence of history how wisely the place had been selected from a political and commercial point of view, we must inquire this evening whether the selection was equally happy, as regards the sanitary conditions of the district which surrounded the new town. The argument is full of practical interest, on account of the mighty struggle which we modern Romans have actually entered into against malaria, against a plague which seems to be spreading slowly, but surely; everywhere there is a superabundance of moisture, both in the air and in the land; in other words, which is invading one-fifth, at least, of the inhabited world.

The history of malaria in connection

with Rome must be divided into five periods: the pre-historic, the republican, the imperial, the mediæval, and the modern, each one marking a distinct stage in the increase or in the decline of the plague, as well as a change in the means adopted by the inhabitants of the fever-stricken district to protect themselves from the evil.

As regards the pre-historic period, we lack, of course, positive evidence, because, when ancient writers speak of hygienic matters at the time Rome was founded, either they speak at random, or else they saw things as they appeared in their own age. It seems probable that, at that time, all the low-lands surrounding the Alban volcanoes, as, for instance, the Pomptine, the Volscian, and the Latin districts, were comparatively healthy, on account of the purifying action of telluric fires, of sulphuric emanations, and of many kinds of healing mineral springs. In the deadly calm of nature which has succeeded the extinction of the Latin volcanoes, we find it difficult to conceive an idea of the endogenous activity which prevailed at that time. All along the valley of the Roman forum, which valley corresponds to a fissure or rent of the soil between the Palatine and the Quirinal hills, volcanic phenomena continued to appear, even in historical times.* The chasm under the

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north-east spur of the Palatine, into which Marcus Curtius is said to have leaped, seems to have been the crater of a kind of geyser. Near the Janus quadrifrons there were hot sulphur springs, described by Varro (LLV., 32). In the fourth century before Christ, powerful jets of water sprang up suddenly in a street called Justeia or Justeiana. Julius Obsequens speaks of other jets of reddish water, near the Senate Hall, which he compares to blood (*sanguine fluxit*). The district of the Campus Martius is called *campus ignifer* by Livy, *fumans solum* by Valerius Maximus, ——— by Zosimus, on account of volcanic smokes and emanations, which for centuries have been noticed there.

The campagna must have been even more strongly purified, especially around the slopes of the Alban hills, where hot mineral springs were particularly abundant. At any rate, this is the only way to explain the presence of a thriving, healthy, strong, and very large population in places which, a few centuries later (namely, at the end of traditional, and at the beginning of historical times), are described as pestilential. Autunnæ, Collatia, Corioli, Tellene, Politorium, Crustumium, and many other centres, so populous in volcanic ages, seem to have been obliterated more by the deleterious effects of the climate, than by the chances of war, and the overpowering supremacy of Rome. In the Volscian district, along the marshy Tyrrhenian coast, there were numberless settlements—Ficana, Lavinium, Ardea, Pyrgi, and so forth. As regards the Pomptine region, Pliny asserts that it was the abode of a dense and thriving population.

It may be a simple coincidence, it may depend upon a mere accident, this

fact of the extinction of human life at the precise time in which volcanic life was extinguished in the old Latium, but it is a chance worth scientific investigation. There can no longer be any doubt that malaria invaded the volcanic regions the very minute they ceased to be volcanic.

As regards the site of Rome itself, we can hardly believe the words of Cicero (de Rep., 2, 6), by which he describes it as *in regione pestilenti salubris*—"salubrious in a pestilential region"—although the same observation is made by Livy, who considers it almost a prodigious fact that the town should prove healthy in spite of the pestilent and desert region by which it was surrounded (5, 54-7, 38). They evidently refer to the state of things prevailing in their own age. How is it possible that a hill like the Palatine, only a few feet high, and surrounded on three sides by poisonous marshes, should be exempt from the effects of malaria? The other hills of Rome were not better favored, hygienically speaking; the Cælian and the Aventine suffered from the effluvia of the swamps near the Porta Metronia, the Quirinal and the Pincian likewise from those of the Caprea Palus; in fact, Livy asserts that, before the construction of the Cloaca Maxima, every valley between the seven hills was nothing but a boggy quagmire. These hot-beds of malaria were fed by numberless springs, sometimes above, sometimes under ground, impregnating the whole region with dampness, which is one of the three, and perhaps the most active co-efficient of the plague.

The clearest proof of the virulence of malaria in the first century of the history of Rome is afforded by the large number of altars and shrines dedicated by its early inhabitants to, the

Goddess of the Fever and other congenial divinities. At the time of Varro, there were not less than three temples of the Fever left standing; one on the Palatine, one in the square of Marius, on the Esquiline, one on the upper end of the Vicus Longus, a street which corresponds to, within certain limits, the modern Via Nazionale. The Esquiline quarter seems to have been the worst of all as regards sanitary conditions; in fact, besides the Fever's temple, there was an altar dedicated to the Evil Eye (*Mala Fortuna*), and an altar and a small wood dedicated to the Goddess *Mefitis*. Near the Prætorian camp, and near the modern railway station, I have found, myself, an altar consecrated to *Verminus*, the God of Microbes. On the top of the *Sacra Via*, there was a shrine of *Orbona*, who is considered to be the Goddess of ———; and lastly, in the very centre of the Roman Forum, there was an altar sacred to *Cloacina*, a goddess of typhoid, I suppose.

It appears from the particulars just given, that the primitive inhabitants of Rome, acting as men always do act under such circumstances, when they find themselves exposed to the ravages of an unknown evil, utterly ignorant of its mysterious nature, and of the proper way to fight and to lessen its effect, raised their hands towards their gods, and actually increased their number, and contrived new ones, imploring from Heaven the help which they failed to secure with their own resources. After a lapse of many, many years the request of those simple and energetic men was granted, and their town was made comparatively healthy, not in a supernatural or miraculous manner, but as a just and well-earned compensation for the efforts they had made and for the trouble they had taken to establish a better state of things. Strange to say,

after the fall of the empire, when Rome, almost annihilated by the inroads of barbarians, found itself in condition almost worse than the condition of the early age, powerless to accomplish any work of improvement, and exposed again to the full influence of malaria, the inhabitants turned again their eyes towards God, built a chapel near the Vatican in honor of the *Madonna della Febbre*—our lady of the Fever—which chapel became one of the most frequented and honored chapels of mediæval Rome.

The principal works of improvement successfully completed in ancient times for the benefit of public health, and for malaria may be chronologically described as follows: I. The construction of drains. II. The construction of aqueducts. III. The multiplication and the paving of roads. IV. The right organization of public cemeteries. V. The drainage and cultivation of the Campagna. VI. The organization of medical help.

First, as regards the drains: The plan of the Etruscan engineers employed by the second Tarquinius to organize the drainage of the town, seems to have been to give an outlet to the ponds and swamps and marshes which stretched along the valley between each couple of hills, more than to carry off the sewage in the modern sense of the word. The *Cloaca Maxima*, *receptaculum omnium purgamentorum urbis*, the main collector, as Livy describes it, has been praised, admired, eulogized by Dionysius 3, 67, Pliny (36, 15) Aurelius Victor (V. Ill. 8), Strabo (V. 3), Dion Cassius (49, 43), and in modern times by Niebuhr and Bunsen. There is no doubt, that the work is simply wonderful, an immense sewer, built twenty-five centuries ago, on unstable ground, against enormous practical difficulties,

which still answers well its purpose, and is a work to be classed among the greatest triumphs of engineering. But the exactness of an archæologist compels me to say that the Cloaca Maxima, in spite of its name, cannot any more boast of the priority which it has enjoyed for so many centuries in the department of Roman sewers. In walking along the left bank of the Tiber, I had long noticed the mouth of another cloaca a trifle larger than the Maxima, and separated from it by an interval of some three hundred feet. I had heard it called the cloaca of the Circus Maximus, but I was ignorant on whose authority and by what reason such name had been applied. Six years ago, at the bottom of the valley which separated the Palatine from the Coelian, between the Arch of Constantine and the Church of S. Gregorio at Monte Celio, a cloaca even larger and higher than the Maxima was discovered, three-quarters of a mile from its junction with the Tiber, at the depth of forty feet. The enormous size of its blocks, the beauty and perfection of its masonry, and the wonderful preservation make it compare most advantageously with its rival, the Maxima, to which it is altogether superior as regards length and extent of district drained.

The sewers of ancient Rome answered pretty well their purpose, especially if we take into consideration the remote age in which they were constructed, and the ignorance of the engineers of modern sanitary principles, and of the theory of microbes. Their greatest defects are, first, that they were used at the same time to carry off sewage and the refuse of the town, and the rain water; second, that this double employment made it necessary to have large openings along the streets, so that the population was permanently

brought in contact with the poisonous effluvia of the sewers. Many of these mouths of drains have come down to us, some exceedingly rough and primitive, some more elaborate and cut in marble. The most celebrated, perhaps, is the so-called Bocca della Verità, a marble disc, five feet in diameter, with the head of the Ocean in alto-rilievo in the centre, through the open mouth of which the rain water would escape. This monument, the scarecrow of children who show an inclination to lie, is preserved in the portico of the church of S. Maria in Cosmedin, near the ancient forum Boarium. The third defect of Roman sewage was that each sewer emptied directly into the Tiber, thus polluting its waters, which were not only used for bathing and swimming purposes, but which were actually drunk.

The best apology for this state of things is to be found in the fact that not only modern Rome itself but many other European capitals, not to speak of provincial towns and villages, were kept until lately in an absolutely identical condition. The improvement in the department of sewers is one of the last if not the very last achievements of modern science, in connection with hygiene, and it is still far from perfection.

The introduction of pure drinkable water into Rome, took place not before the fifth century after its foundation. Sextus Julius Frontinus, a magistrate, who presided over the department of aqueducts, under the Empire of Trajan, begins his "Commentaries" on the subject with the following remarks: "During four hundred and forty-one years the Romans satisfied themselves with the use of such water as they could obtain on the spot, from the Tiber, from wells, or from springs. Some of these springs are still held in great consider-

ation, on account of their supposed healing efficiency. Such are the springs of the Casuœue, and of Apollo."

The waters of the Tiber, reaching Rome after a run of 249 miles through clay or alluvial ground, are certainly not pure or clear; in fact they are saturated with mineral and solid matter. It results from official observations carried on between March, 1871 and February, 1872, that with an average daily efflux of 1,296,000 cubic metres, the river has carried down to the sea 8,582,333 tons of sand, equal to a volume of 4,114,253 cubic metres. In spite of this, what the ancients assert about the potability of its waters is proved by the fact that, after the destruction of imperial aqueducts, the population of mediæval Rome resorted again to this the only means of quenching its thirst: in fact the desire and the necessity of being near the river, must be considered as the leading cause of the abandonment of the healthy hills, and of the mustering of the population in the Campus martius. The salubrity of the waters of the Tiber is celebrated by Alessandro Petroni, physican to Gregory XIII, and by Alessandro Bacci, physican to Sixtus V. Clement VII, in the journey to Marseilles, which he undertook in 1553, to celebrate the marriage of his niece, Catherine de Medicis, with the Duke of Orleans, afterwards Henry II, acting on the advice of his physican Corti, brought with him such a quantity of water from the Tiber as to be sufficient for all the requirements of the journey. The same precaution was taken by Paul III, Farnese, in his wanderings to Loretto, Bologna and Nice.

Fancy what must have been in early Roman times the sanitary conditions of a town, the drains of which, not washed by any influx of water, would communicate from space to space with

the public streets by large unprotected openings, and would empty into a river, the polluted waters of which were drunk by the whole population! The first remedy against the evil was adopted in 442 by the building of an aqueduct, which should carry into the city the water of a spring seven and a half miles distant, called aqua Appia, from the name of Appius Claudius Cæcus, the builder of the aqueduct, and of the Appian way. The first step in the right direction once taken, it was easy to advance boldly. I cannot follow stage by stage the history of Roman aqueducts. I will simply trace a brief and comprehensive sketch of the water-supply of Rome, under the Empire, that is to say, at the period in which it was brought to perfection.

Comparing together the accounts left by Frontinus and Procopius on this subject, with remains of the aqueducts radiating from Rome in every direction, and which form such a characteristic landmark of the Campagna, we gather the following information:

Eighteen springs had been collected and canalyzed by the Romans from distances varying from a minimum of seven and a half miles to a maximum of forty-four. The waters were brought to Rome by means of fourteen aqueducts, the length of which varies from a minimum of eleven miles, to a maximum of fifty-nine. The aggregate length of these fourteen aqueducts amounts to three hundred and fifty-nine and one-third miles: of which three hundred and four miles are underground, and fifty-five above ground, the channel being carried on the top of really triumphal arcades, at prodigious heights, exceeding sometimes one hundred feet. The quality of the waters was very different.

Best of all were considered the Mar-

cia, the Claudia, and the Virgo: worst of all the Anio Vetus and Alsietina; these two were accordingly employed only for the irrigation of gardens and and for washing away the drains; and were drunk only in cases of absolute necessity. As regards the temperature, the Marcia was the coldest, "*Marsas nives et frigora ducens Marcia*" as Statius sings. It marks 46° Fahrenheit at the spring of S. Lucia. Tacitus relates among the crazy exploits of Nero his attempt to profane the sacred spring by swimming across it from shore to shore. The pollution of the pure icy waters was revenged with a rheumatic fever which brought the young emperor to the verge of death.

I have been asked many times the question why the Romans have spent such an amount of time, labor and money in building these prodigious channels across mountains and valleys, tunnelling the former and bridging over the latter with tunnels and bridges many miles long; when it would have been so easy and so economical to lay down pipes, following at a moderate depth the undulations of the country.

In other words, I have been asked whether the Romans have known or not the use of syphons. To be sure they knew it, in theory and in practice.

Well known are the syphons of Patarae a Aspendas and Pamphilia, of Constantina in Mauretania, and of Lyons in Gaul. The finest and most daring of all is the syphon Alatri, a town in the Nernici district built by a wealthy citizen Betilienus Varus, a century and a half before the christian era, and which was capable of supporting a pressure of ten atmospheres. As regards the main aqueducts supplying Rome with a daily supply of fifty-four million cubic feet of water it would have been impossible to substitute metal pipes for channels of

masonry, because the Romans did not know cast iron, and no pipe, except of cast-iron, could have supported such enormous pressures. Let us rejoice, at this state of things, because had the ancients known the contrivances of modern industry, we should most likely have been deprived of the loveliest sight which our Roman campagna offers.

Before leaving this interesting subject of the water-supply, I must make two more remarks; the first concerns the system so widely followed in our age of damming across the beds of rivers in mountainous regions, in order to create artificial lakes or reservoirs of pure water, from which the supply is derived. The ancients knew and followed this system on a magnificent scale. One of our aqueducts, the Anio Novus drew originally its supply directly from the river Aniene at a place forty miles distant from Rome. It happened that every time the river was swollen by rains, the aqueduct would carry down troubled and undrinkable water, which would fill up the channel with incrustations of carbonate of lime, and choke the minor pipes. To mend the matter, and to obtain a constant influx of pure water, the valley of the Anio was dammed, not once, but three times, across the picturesque gorge or cañon of the Simbruine mountains, between the modern town of Subiaco and the Benedictine abbey of the Sacro Speco, and three artificial lakes were thus obtained, in which the water was purified three times.

The second remark concerns the system employed by the ancients in boring and tunneling the mountains for hydraulic purposes. Two very curious documents have come down to us on this subject in connection, of course, with hydraulic enterprise. The first is the official report of the perforation of

a tunnel, to bring down to Bougie, Algeria, (called then *Civitas Salditane*), the waters of a spring, fourteen miles distant, now called *Ain-Seur*. The report, engraved on a marble altar discovered in 1866, near *Lambæse*, begins with a petition addressed in the year 152 by *Varius Clemens*, governor of *Mauretania*, to *Valerius Etruscus*, governor of *Numidia*. The petition reads as follows: "*Varius Clemens greets Valerius Etruscus, and begs him in his own name and in the name of the township of Saldæ to despatch at once the hydraulic engineer of the III legion, Nonius Datus, with orders that he should finish the work, which he seems to have forgotten.*" The petition was favorably received by the governor and by the engineer, *Nonius Datus*, who having fulfilled his mission, wrote to the magistrate of *Saldæ* the following report:

"After leaving my quarters, I met with the brigands on my way, who robbed me even of my clothes and wounded me severely. I succeeded after the encounter in reaching *Saldæ*, where I was met by the governor, who, after allowing me some rest, took me to the tunnel. There I found everybody sad and despondent, they had given up all hopes that the two opposite sections of the tunnel should meet; because each section had already been excavated beyond the middle of the mountain without effecting the junction. As it always happens in these cases, the fault was attributed to the engineer, as if he had not taken all the precautions to insure the success of the work. What could I have done better? I began by surveying and taking the levels of the mountain: I marked most carefully the axis of the tunnel across the mountain; I drew plans and sections of the whole works, which plans I handed over

to *Petronius Celer*, then governor of *Mauretania*, and to abound in extra precautions, I summoned the contractor and his workmen, and began the excavation in their presence, with the help of two gangs of experienced veterans, namely of a detachment of marine-infantry (*classicos milites*), and of a detachment of Alpine troops (*Gæsates*). What could I have done more? Well, during the four years I was absent at *Lambæse*, expecting every day to hear the good tidings of the arrival of the waters at *Saldæ*, the contractor and the assistant had committed blunder upon blunder; on each advancing section of the tunnel they had diverged from the straight line each towards his right hand side, and had I waited a little longer before coming, *Saldæ* would have possessed two tunnels instead of one." *Nonius Datus*, having discovered the mistake, caused the two diverging arms to be united by a transverse channel; the waters of *Ain-Seur* could finally come across the mountain; and their arrival at *Saldæ* was celebrated with extraordinary rejoicings, in the presence of the governor *Varius Clemens* and of the engineer.

To come back to my Rome, however, the longest tunnel perforated in its vicinity for the sake of the water-supply is the one of *Monte Affliano*, between *Tivoli* and *St. Gericomio*, 4,950 metres long. Its boring was (by *Domitian*) intrusted to one of the Imperial contractors, *L. Paquedius Festus*. A daring and difficult work it was, especially on account of the difficulty of ventilation in a channel only seven feet high, three wide. The contractor, before commencing the perforation, made a vow to a goddess of local worship, named the *Bona Dea*, to restore her decayed temple on the mountain if the enterprise should succeed. The two

opposite sections met most successfully on July 3, 88. The beautiful columns and fragments of statuary discovered by us on the summit of Mount Affliano prove that the vow of L. Paquedius was not what is called the vow of a sailor.

The influence of this magnificent supply of water on the health of the inhabitants of Rome and the Campagna can be easily understood. There was no farm, no country-house, no villa, there was no cluster, however small and insignificant, of rustic population which could not be favored with copious fountains of icy-cold, salubrious water. Villages and towns, such as Ostia, Portus, Gabii, Borillæ, Veii, the ruins of which are scattered to-day in a waterless desert, were, in Roman times, almost overflowed, and their aqueducts can vie in length and magnificence with the main aqueducts of the capital.

As regards public cemeteries—another hot-bed of pestilence—their reform and regulation took place even later than the reform in the supply of water. I speak, of course, of *public* cemeteries for the burial of artisans, of slaves, and of the poorest classes of the population, because people belonging to higher classes usually provided themselves with private tombs, either within the precincts of their villas and farms, or on the border of high roads. It is impossible to conceive an idea of the horrors of a common *carnerium* or foss in the first centuries of Rome. I will give particulars of one only, which occupied a large district on the Esquiline because these particulars have been discovered by myself, and have not yet been fully disclosed to the general public.

The Esquiline cemetery was divided in two sections: one for the artisans who could afford being buried apart in Columbaria, containing only a given

number of cinerary urns; one for the slaves, beggars, prisoners, etc., who were thrown in revolting confusion into common pits or fosses. This latter section covered an area 1,000 feet long, 300 deep, and contained many hundred *puticuli* or vaults, 12 feet square, 30 deep, of which I have brought to light and examined about seventy-five. In many cases, the contents of each vault were reduced to a uniform mass of black, viscid, pestilent, unctuous matter; in a few cases the bones could be in a certain measure singled out and identified. You would hardly believe me when I say that men and beasts, bodies and carcasses, and any kind of unmentionable refuse of the town were heaped up in these dens. Fancy what must have been the condition of this hellish district in times of pestilence, when the mouths of the crypts must have been kept wide open the whole day! But there is still something worse. You have certainly heard of the great fortification which protected Rome on the east side, called the Agger, or Embankment of Servius Tullius, from the king who raised it. This fortification, more than one mile long, comprised a ditch or moat one hundred feet wide, thirty deep, with ramparts one hundred feet wide, thirty high, supported and strengthened on the outside by a lofty, battlemented wall. It seems, under the republican rule, and on the occasion of a stupendous mortality—to use the words of Livy—the portion of the huge moat which skirted the cemetery of the Esquiline was filled up with corpses, thrown down as if they were carrion, until the level of the embankment was reached. The discovery of these revolting particulars took place in 1876, under the circumstances which I am going to relate. In building the foundation of a house at the corner of Via Carlo-Alberto and Via Mazzini, the

architect, lead into deception by a solid bed of tufa on the northern half of the building ground, began laying his masonry and filling up the trenches at the uniform depth of twelve feet under the level of the street. All of a sudden, the ground gave way, and one-half of the area was sunk into a chasm thirty feet deep. On careful examination of the circumstances of the catastrophe, it was ascertained that whereas the northern half of the foundation rested on the solid embankment or Agger of Servius Tullius, the southern half had been laid on the site of the ditch, filled up with thousands upon thousands of corpses, which, being brought in contact with the air after twenty centuries, had sunk into dust or nothing, leaving open a huge chasm. According to measurement which I took at the time, this mass of human remains was, at least one hundred and sixty feet long one hundred wide, and thirty deep. Giving to each corpse an average space of twenty cubic feet, which is more than sufficient, there were, at least, twenty-four thousand bodies in a comparatively small space.

As if all the evils described were not deemed enough, the town authorities had increased their efficiency by allowing the daily refuse of a population, numbering nearly a million souls, to be heaped up within and around the precincts of this Esquiline cemetery. In latter times, seven centuries after the foundation of Rome, they endeavored to stop the practice, or at least to regulate it. Decree upon decree was issued on the subject, and a line of stone cippi inscribed with sanitary rules was set up around the edge of the pestiferous ground. I have found three of these police regulations engraved on square blocks of travertine. Here is the text of one: "C.

Sentius, son of Caius, Prætor, by order of the Senate has set up this line of terminal stones, to mark the extent of ground which must be kept absolutely free from dirt and from carcasses and corpses. Here also the burning of corpses is strictly forbidden." Another hand, probably the hand of a man living in the neighborhood and within reach of the effluvia of the place, has written in huge red letters the following entreaty at the foot of the official decree: "Do carry the dirt a little farther; otherwise you will be fined." Could you believe that this line of stones, beyond which the refuse of the town could be legally thrown and be allowed to putrify under the burning sun, was only three hundred feet distant from the walls and embankment of Servius Tullius? And would you believe that on the day of the discovery of the above-mentioned stone, June 25th, 1884, I was obliged to relieve each quarter of an hour my gang of workmen, because the smell from that polluted ground (turned up after a putrefaction of twenty centuries) was absolutely offensive and unbearable even for men so hardened to any kind of hardships as my excavators.

The reform in this branch of public hygiene, the suppression of the popular cemetery on the Esquiline, took place only under Augustus, at the suggestion of his enlightened prime minister, C. Cilnius Mæcenas. He obtained from his sovereign and friend the concession of the whole district; buried it under an embankment of pure earth, twenty-five feet high and a third of a square mile in surface, and on the newly-made ground he laid down his magnificent gardens, the world-known *Horti Mæcenatiani*, of which I shall speak at length in one of my next lectures.

The event proved to be of such unexpected importance for the improvement of the health of Rome, that Horace himself, the brilliant court poet, thought it worth being sung by his muse :

*Nunc licet Esquilis habitare salubribus, atque
Aggere in aprico spatium, quo modo tristes
Albis intorem spectabant ossibus argum* (Sat.
I, 8, 14).

I shall not mention other improvements carried on with the progress of Roman civilization, such as the paving of streets, the opening of a thick network of roads in the Campagna, the drainage of damp districts, the spreading of suburbs, the careful cultivation of the soil, and so forth ; because I shall have occasion to speak of these particulars in my lecture on the Campagna.

THE SANITARY CONDITION OF THE COUNTY JAIL AT CAR- LISLE, PA.*

BY R. LOWRY SIBBET, M.D., OF CAR-
LISLE, PA.

In compliance with your order of the 10th inst., I proceeded to the Cumberland County jail, and, with the assistance of the deputy sheriff, made the necessary inspection and measurements for a report. Since your visit to this jail in relation to drainage, and since I made a report to the commissioners of the county one year ago, a copy of which was sent to you, certain improvements have been made which I should mention, though they have not all been of much advantage. An odorless excavator was purchased by the commissioners, and was

used, but the pits or wells are now as full as they were when complaints were made. Pine floors were laid upon the old floors of some of the cells, which has made an excellent harbor for rats and mice, and when the floor is scrubbed the water running through will cause the under floor to rot, which may give rise to sickness. Nine of the cells upstairs have been made more secure by lining the ends of them with boiler iron. And finally a new steam generator has been placed in the basement story, and some new steam and drainage pipes have been inserted instead of the old ones.

The Cumberland County jail is conveniently located on the corner of Main and Bedford streets, in the borough of Carlisle. Its position is the best, the sun shining upon the front and the two sides. There are those who would place it outside the borough limits, but the expense of an entire new building and the necessity of keeping a van for the conveyance of the prisoners to and from the courthouse, and the inconvenience of such a change, should not be overlooked. The drainage of such an institution in Carlisle presents no difficulties ; besides, there are hotels in the borough which will soon, no doubt, be declared nuisances on account of a want of drainage, and both might be drained in the same way.

As intimated, the main building, in which the sheriff resides, is a handsome and well-built structure, and the walls around the lot of ground are twenty feet high and very substantial. The cellars and kitchens are in good condition. The only part of the jail that is defective is the building in which the prisoners are kept. It is attached to the north side of the front building and gives the jail the shape

* A report made to the Secretary of the State Board of Health.

of the letter T. Its walls are built of rough, unhewn stone, through which several times prisoners have dug their way out. The basement story contains the steam generator, coal and wood. It is a great harbor for rats, which ascend to the cells above by making use of the water and steam pipes. The floor of the next story rests upon arches, and above there are two rows of cells on each side. This story is eighty-five feet long and fifty feet broad inside the walls, and twenty feet high to the square. The corridor or hall extends the whole length of the building, is seventeen feet broad and twenty-two feet high to the middle of the arch, which would give the hall a capacity of 31,790 cubic feet. There are eight cells below on each side and nine cells above on each side, which are reached by a balustrade, making in all thirty-four cells. The upper cells are a little larger than the lower cells, but they are all eight feet broad. Their average length is fourteen feet and their average height is a little less than ten feet, which gives to each a capacity of 1120 cubic feet, and an aggregate capacity of 38,080 cubic feet. This would allow of 69,870 cubic feet of atmosphere in the building. When I succeeded Dr. Riley as physician to the jail, January 1, 1884, there were about 300 prisoners in the jail, which would give 239 cubic feet of space to each one when permitted to run loose in the hall; but when they were all crowded into the cells at night each one had an average of 123 cubic feet of space. There were often, however, ten persons crowded into one at night, which gave 112 cubic feet of space to each one. Under the present sheriff there has been no necessity to crowd the so-called court-prisoners into a few cells above, although there are

usually about thirty-five or forty court-prisoners in these eighteen cells. There are sometimes three in a cell. At present there are about 100 vagrants in the cells below; in the month of January and February there were about 150, and there will possibly be this number in the coming months. The court-prisoners complain that they do not get out of their cells for a whole month. This is true; but it is done to keep order in the jail. There is but one small wash-room in this building, and one bath-tub. The warm water comes from the range in one of the kitchens, and some of the court-prisoners complain that they cannot get to the bath-room to wash their clothes once in a month.

The ventilation of this building is very imperfect. There are ten small openings in the arched roof, and each one has a frame which turns in the center, fifteen by six inches, with a pane of glass in it. Each cell has a small opening in it near the ceiling, nineteen by five inches, in which is hung by hinges a small frame in which there is a pane of glass. Under the arch at the north end of the corridor there is a semi-circular window whose radius is two and a half feet, which may also be opened if the prisoners prefer. Besides, there is a grated door at the north end of the corridor or hall, through which atmosphere may come during the day and in warm weather. At night and in the winter the blind-door is closed upon it, so that the atmosphere of the building is often extremely foul.

The illumination of the building is also very imperfect, as the light reaches the prisoners by the same means.

The heating of the building is now much better than formerly, but it is

very irregular. It is left in the care of unskilful persons. There is no thermometer kept in this building.

Until recently the court-prisoners slept upon straw beds on the floor; now they have all got wooden cots. The bedding is very cheap, and is often very dirty. The vagrants sleep on the floor. The court-prisoners get a pair of cheap shoes, a pair of cheap trousers, and a cheap blouse at the end of their service.

At present the food is cheap but good.

Disinfectants are used, and lime to whitewash the cells and corridors.

The drainage is carried into pits in the jail-yard, all of which are now as full as they can get—that is, eighteen inches from the surface of the ground—as they communicate with a deep well outside the jail-yard. The pits have not been emptied since the month of last March.

The disgrace of allowing the sexes to associate together in this prison has recently become a subject of newspaper comment; and the court at its last session appointed a committee of medical gentlemen of the town to inspect the building and to report. The committee agreed that nothing could be done to separate the female vagrants from the male vagrants; but a recommendation was made that six of the upper cells at the north end of the building should be given to the female court-prisoners, and that a partition should be constructed so that they would not be able to see the remaining prisoners. At this date nothing has been done to correct the evil.

As medical inspector, and acting under authority of the Board of Health of the State, and with the advantage of two years of experience as physician to this jail, I have but two

things to recommend. The foregoing conditions allow of no other solution—a new building for the prisoners and proper drainage.

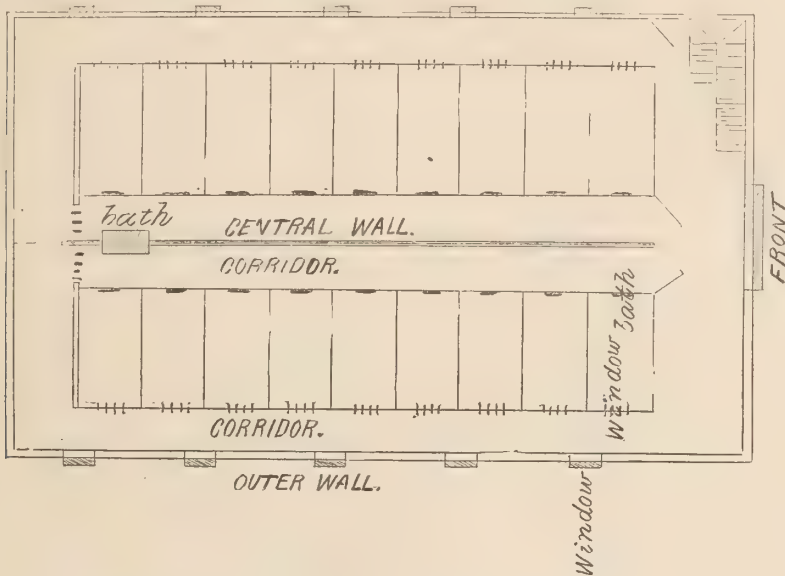
The source of the numerous evils which have clustered around this institution so many years, is to be found in a badly constructed building for the prisoners. Everything about it is made wrong from the foundation to the roof. One-half of the cells face the other half, and all of them open into a large corridor or hall. Men and women, boys and girls, old criminals and youthful ones, can hear and see what the worst of men and women say and do. They can converse with each other at all hours of the day and night; they can tease and provoke each other. As a result, the most profane and vulgar language is used in the hearing of all. When the male prisoners are out for exercise they can go to the cells of the females, and when the females take exercise they can go to the cells of the male prisoners. To preserve order both sexes are often kept in their cells for weeks; and sometimes the blind-doors are closed against them, in which case there is almost no light in the cells and no ventilation. The sheriff is obliged to resort to these means of preserving order, severe as they may seem to be. A change of administration would not correct these evils, no matter how upright and moral the officials may be. Even if a cell could be given to each prisoner this institution would still be a school of vice, immorality, and shame.

But there is another feature of this badly constructed building to which we must refer. Those who built it may not have intended it for a *rendezvous* for vagrants, but they certainly succeeded in this very well. The large hall and the large cells suit the vagrant

class of prisoners, and constitute the greater part of the nuisance for which the people are much more responsible than the officials of the county or town. It is this building which attracts them. They come from New Jersey, Maryland and Ohio, as well as from Pennsylvania; they are arrested by the constables, committed by the justices of the peace, and of course admitted by the sheriff. In the summer months they go out and advertise the institution.

That all this constitutes a nuisance

used for the steam generator, coal, and wood. Let there be a central wall extending from the ground to the roof. This would make four or six sections in the building—two on each story. The sections allow of a classification of prisoners: first, males and females; second, old criminals and youthful ones. Those in one section cannot see those in another section, nor can they hear what is said. Six, eight, or ten cells should be constructed in each section, as the commissioners of the county may think needful. They



in the sanitary and moral sense of the term I have no doubt, and the only remedy is a new building built upon a plan which may be represented by the above wood-cut. It is a slight modification of a plan which has been endorsed by the most eminent jurists, sanitarians, and philanthropists.

Construct a new building on the site of the present one, using as much of the material as possible. Let it be fifty or sixty feet long, forty-five feet broad, and three or four stories high including the basement, which may be

should be made of boiler iron. In one section they should be made very secure, in another moderately secure, and in the remaining sections they need not cost so much. Each group of cells is surrounded by corridors, so that the cells do not come in contact with the walls. This makes the prison doubly secure. In the front corridors are iron stairways. The central corridors on each side of the central walls admit the prisoners to their cells, and blind-doors are closed upon them. There is a bath-tub in each corridor.

The prisoners take exercise in these corridors, one, two or three being allowed out of their cells during the same hour. The cells face the side corridors, and an abundance of light is admitted through the bars of the cells. The prisoner's food is passed to him from the side corridors. Each cell is made for one person only. He has an iron bedstead, good bedding, a small table, a water-pot, and plenty of water. In such prisons there is a library, and the prisoner has a choice of books. He has much time for reflection and no one to irritate him. His cell is well lighted, heated, and ventilated, and he leaves his confinement a better man in every respect.

This kind of prison life has no attractions for the tramp. Thirty days of separation from his associates effects a cure; he leaves the county and never returns. There should be no provision made for vagrants in a jail, except that which is made for all prisoners.* It is said on the best authority that where this system of imprisonment has been adopted crimes and misdemeanor have sensibly diminished, and it certainly looks very reasonable. Those who wish to study this subject should consult the publications of the boards of public charities of the states of Ohio, New York, Massachusetts, etc.

As to the other recommendation we need only say that the drainage of the jail is a very simple matter. In connection with the borough authorities the commissioners of the county could make a permanent and very valuable improvement at moderate expense.

All of which is respectfully submitted.

December 22, 1886.

HEALTH HINTS.

There's a skin without and a skin within,
A covering skin and a lining skin;
But the skin within is the skin without,
Doubled inward and carried complete through-
out.

The palate, the nostrils, the windpipe and
throat,

Are all of them lined with this inner coat,
Which through every part is made to extend,
Lungs, liver and bowels from end to end.

The outside skin is a marvelous plan
For exuding the dregs of the flesh of man;
While the inner extracts from the food and the
air

What is needed the waste of the flesh to re-
pair.

Any brandy or whisky, beer or gin,
Is apt to disorder the skin within;
While the skin, if dirty and dry, without
Refuses to let the sweat come out.

Good people all, have a care of your skin,
Both that without and that within;
To the first give plenty of water and soap,
To the last, little else but water, we hope.

But always be very particular where
You get your water, your food and your air;
For if these be tainted or rendered impure,
It will have it's effect on the blood, be sure.
The food which will ever for you be the best
Is that you like most and can soonest digest.

All unripe fruit and decaying flesh
Beware of, and fish that is not very fresh.
But of all things the most I would have you
beware

Of breathing the poison of once-breathed air—
When in bed, whether out or at home you may
be,

Always open the windows and let it go free.
With clothing and exercise keep yourself warm
And change your clothes quickly if caught in
a storm,

For a cold caught by chilling the outside skin
Flies at once to the delicate lining within.

All you who thus kindly take care of your skin
And attend to its wants without and within,
Need never of cholera have any fears,
And your skin may last you a hundred years.

JOSEPH POWER,

in *Pall Mall Gazette*.

* Workhouses should be erected at the almshouse of the county for all the poor.

"DONT'S FOR THE SICK ROOM."

The following suggestions are clipped from the "American Druggist." They touch upon points often overlooked by the better practitioners and nurses. Individually such suggestions would seem trifling and unnecessary, but collectively they assume importance.

Don't light a sick-room at night by means of a jet gas burning low; nothing impoverishes the air sooner. Use sperm candles, or tapers which burn in sperm oil.

Don't allow offensive matters to remain; in cases of emergency where these can not be at once removed, wring a heavy cloth, for instance, like Turkish toweling, out of cold water, and use it as a cover, placing over this ordinary paper. Such means prevent the escape of odor and infection.

Don't forget to have a few beans of coffee handy, for this serves as a deodorizer, if burnt on coals or paper. Bits of charcoal placed around are useful in absorbing gases and other impurities.

Don't have the temperature of a sick-room much over 60 degrees; 70 degrees are allowable, but not advisable.

Don't permit currents of air to blow upon the patient. An open fire-place is an excellent means of ventilation. The current may be tested by burning a piece of paper in front.

Don't give the patient a *full* glass of water to drink from, unless he is allowed all he desires. If he can drain the glass he will be satisfied; so regulate the quantity before handing it to him.

Don't neglect, during the day, to attend to necessities for the night, that the rest of the patient and the family may not be disturbed.

Don't ask a convalescent if he would like this or that to eat or drink, but

prepare the delicacies and present them in a tempting way.

Don't throw coal upon the fire; place it in brown paper bags and lay them on the fire, thus avoiding the noise, which is shocking to the sick and sensitive.

Don't jar the bed by leaning or sitting upon it. This is unpleasant to one ill and nervous.

Don't let stale flowers remain in a sick chamber.

Don't be unmindful of yourself if you are in the responsible position of nurse. To do faithful work you must have proper food and stated hours of rest.

Don't appear anxious, however great your anxiety.

Don't forget that kindness and tenderness are needful to successful nursing. Human nature longs to be soothed and comforted, on all occasions when it is out of tune.

CYSTICERCI IN MUTTON.

M. Johannés Chatin, recently read a paper on "Ladrière" in sheep before the Paris Academy of Medicine. Up till now the flesh of sheep was considered when eaten in a raw state, to be as dangerous as pork and beef, owing to the presence of cysticerci in the muscular tissue. According to M. Chatin, however, there is nothing to be apprehended in eating mutton raw, as although the presence of cysticerci has been established in the flesh of sheep, they are never found in such numbers as to determine a veritable "ladrière," and, as they do not attain the development of the cysticerci of pigs and oxen, there is no danger of their transmission to the human species. M. Chatin therefore concludes that mutton in its raw state may be safely prescribed whenever such a form of treatment is indicated.

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Editorial.

TO OUR SUBSCRIBERS.

It is pretty generally known that hygiene is not a popular science; that is to say, it is not cultivated by the masses. While the preservation of health should be the first thought of every one, in reality it is not, and it is only here and there that an intelligent person is found who appreciates the benefits to be derived from the cultivation of this science. This fact makes it up-hill work to establish a journal of hygiene. We have no reason to complain of our subscription list; it is growing nicely, but it is costing us a great deal of money to find out those who are willing to support such a journal. Therefore we are going to ask each subscriber to send us one new subscriber. We will offer to each subscriber who will send us a new name, with three dollars (which will pay for the year 1887 and for the six back numbers from last July), to send a case in which to preserve the journals (in which the volume can be finally bound if desired), and we will also send a case

to the new subscriber. We hope and trust that those who have been kind enough to help us along with their own subscription will realize the great assistance they can render to our good work by helping us in this way.

AGAIN TO OUR SUBSCRIBERS.

WE desire to be of service to those who have helped us, and we therefore offer our services to make any purchases that any of our subscribers may desire. Several persons living away from large cities have written asking us to buy certain articles for them, and this has suggested to us that by making this offer we might serve our friends. Of course, when we buy goods to sell again we can secure a discount, varying on different goods. We would allow our patrons to benefit by this discount; we would say that we will be able to furnish it for ten per cent. less than the price you would have to pay for it if you bought it yourself. You can thus save both trouble and money.

DR. SHAKESPEARE'S REPORT
ON CHOLERA.

IN our issue for October, when announcing the publication of Dr. E. O. Shakespeare's official report on cholera, we inadvisedly said that the report would be published *exclusively* in this journal. We find that this statement has given rise to criticism from a misunderstanding, and we hasten to set matters right. We did not mean that Dr. Shakespeare would give us the report *exclusively*, for this he obviously could not do, as it will be made to the President, communicated by him to Congress, and printed as a congress-

sional document. What we did mean was that we would publish the report *entire*, and we did not think that any other journal would do the same, as the report will make a volume of upwards of six hundred pages. This is what we meant by the use of the word *exclusive*, though we admit that the word was *illy chosen*.

THE ELECTRIC AUTOMATIC INSTRUCTOR.

WE desire to make an explanation of the Electric Automatic Instructor (the advertisement of which is found among our advertising pages), because we honestly and firmly believe that both for pleasure and instruction it is one of the greatest inventions of the present day. We feel no hesitancy in saying that *every* intelligent person who ever sees one and can afford the price will buy it; but as it is obviously impossible for all to see it, we desire to make as intelligent an explanation as possible. First we have a board, about 12x18 inches, sticking up from which are a number of brass points. Then we have a small battery, easily charged and so simple in management that a child of ten could work it; then we have a gong fastened on the board; then we have a large number of cards, perforated, to fit over the brass points, each card containing a series of questions and answers. As you will see by the illustration, you place one of the cords from the battery over the point at any one of the questions, and pass the wooden handle attached to the other cord along the points on the answer side of the card, touching each point, and when the answer to the question asked has been reached the circuit is completed and the bell will ring.

Here we have an explanation of the working of the "Instructor," but it is very feeble to convey its good points. It is the first effort to utilize electricity as an amusement and instruction. For children it is a most admirable teacher, for it instructs them not alone through the sense of sight or of hearing, but through both combined, while for the adult it is not only a source of instruction, but an extremely interesting source of amusement and recreation. From a hygienic point of view it is to be most highly commended, for, since it amuses while it instructs, it imparts knowledge in a way that is the least calculated to overtax the mental organization of the child. The parent will find it an exceedingly pleasant way to pass an hour or so each day in imparting instruction to his children, while, when friends drop in of an evening, there will be at hand a most satisfactory means of entertaining them. As we have said, a verbal description of this "Instructor" must necessarily be inadequate, hence we would conclude by saying that we are sure—we do not at all hesitate to say *we are sure*—that whoever buys one will feel that five dollars has never been more satisfactorily invested.

WHAT THE STATE OWES TO THE PEOPLE AND THE PEOPLE TO THE STATE.

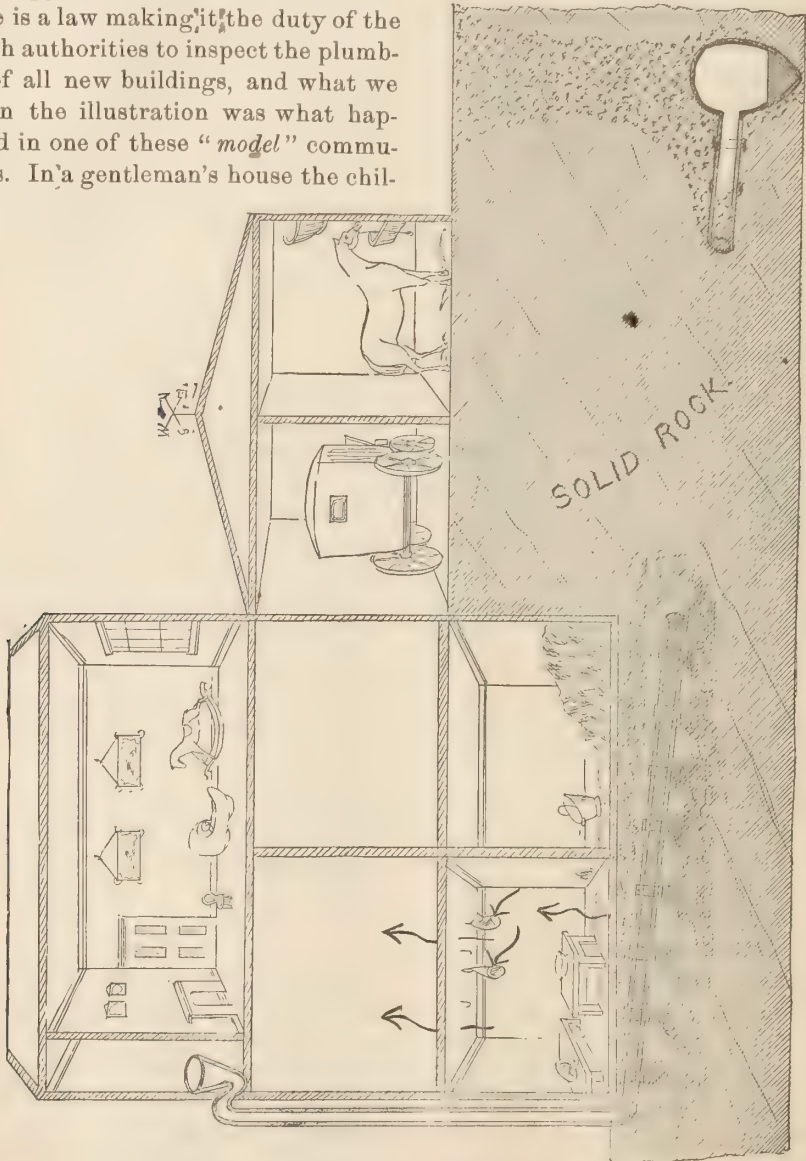
OWING to pressure on our columns we have been compelled to postpone the publication of this address, which was delivered by the late Honorable Erastus Brooks before the State Board of Health of Pennsylvania at its meeting last May. This paper will be full of interest to all right-thinking persons.

Notes and Comments.

A DRAIN THAT DIDN'T GO THROUGH ROCK.

It happens that in some communities there is a law making it the duty of the health authorities to inspect the plumbing of all new buildings, and what we see in the illustration was what happened in one of these "model" communities. In a gentleman's house the chil-

drain which was *supposed* to run under the house and join a sewer in the street behind. When the cellar floor was taken up, there was found a very large quantity of sewage, which had been accumulating *ever since the house had*



dren were always sick, and it was decided to make an inspection of the *been built, seven years before.* During the whole of this time all of the sewage

from the water closet had run under the floor of the cellar; for at the end of the cellar the drain came to an abrupt conclusion against a mass of solid rock twelve yards thick, at the other side of which a pipe was placed and connected with the sewer in the street. It can be readily understood how such a thing could happen. A plumber contracts to do the plumbing of a house for a certain sum of money. When he comes to lay his drain he unexpectedly finds that a mass of solid rock intervenes between the house and the street. If he honestly fulfils his contract he will lose money; if he states the difficulty to the builder or owner, in the majority of cases, he will make no allowance, will insist on the fulfillment of the contract, and the plumber will be the loser, through no fault of his own. He concludes that he must either lose, when possibly he cannot afford it, or he must neglect to properly do his work. The temptation is great and we fear that few would have the honesty to resist. But he knows that his work must pass an inspection. He runs his drain as far as possible through the loose earth, he bores a hole a few feet into the rock at the other end, he makes his connection with the sewer properly, the inspector passes the work, (for he has not eyes that can peer through the rock) and it is supposed that all is well until some sickness induces an investigation, and what we see is disclosed. Of course no legislation can meet such a case. The plumber might be held for manslaughter, if it could be conclusively shown that death had resulted from his negligence, but it would be difficult (however desirable) to secure such legislation. Here is a case wherein the remedy must lie with the individual. As you watch your carpenter to see that he uses only well-seasoned lumber,

so you must watch your plumber as he works. His interest lies only in doing his work that it may pass inspection; your interest is a vital one, and if you will not take the trouble to watch it, how can you expect him to respect it?

MARRIED WHILE SICK IN BED, WITH SCARLET FEVER.

In reality, "truth is stranger than fiction." It recently transpired that a young lady belonging to a presumably intelligent family in this city was engaged to be married. A few days before the date set for the ceremony she was taken sick and the day before the wedding her malady proved to be scarlet fever. It will hardly be credited when we chronicle it, but it is positively a fact, that the brides-maids, groomsmen, and friends assembled in this sick chamber and the young lady was married. Truly the people need enlightenment in hygiene or else they need stringent laws to prevent them from making themselves nuisances prejudicial to the health of the community.

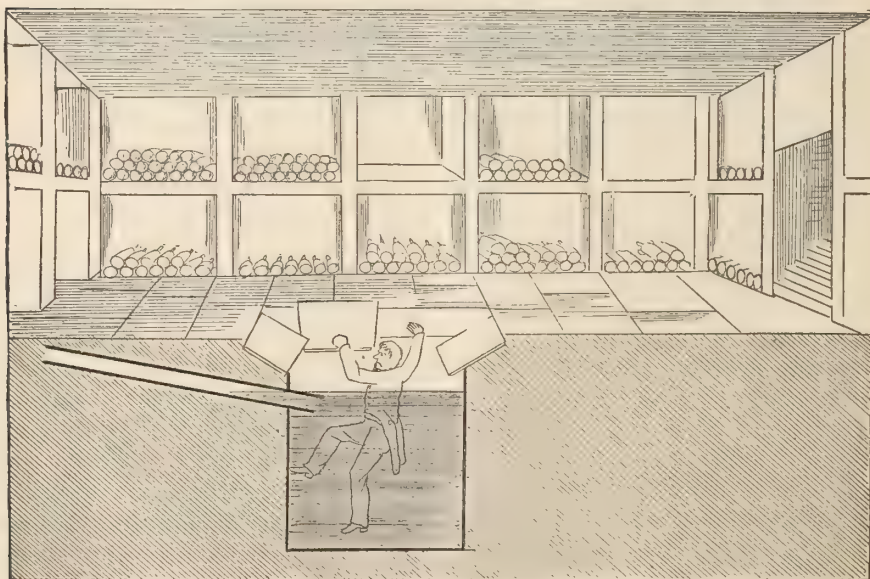
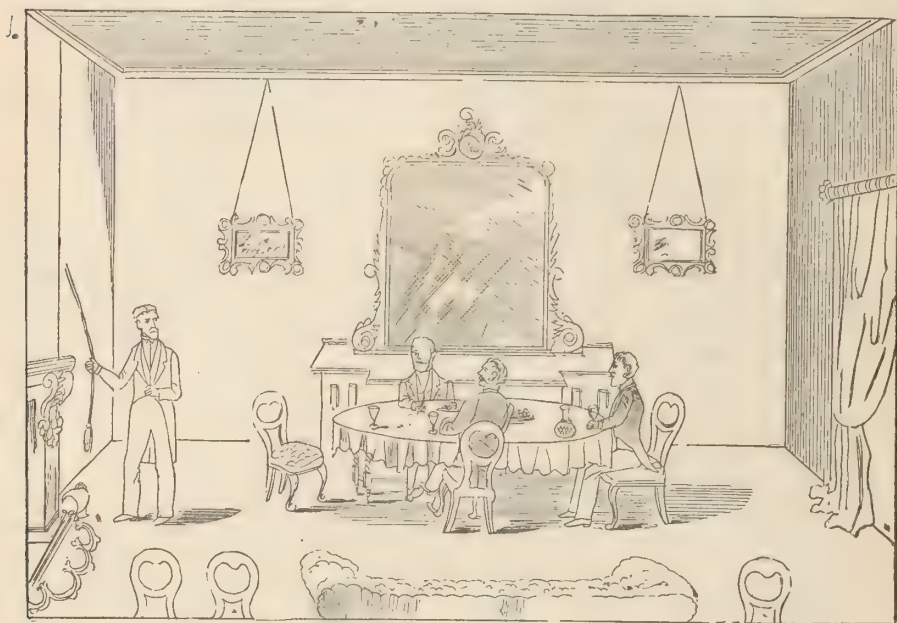
CHARGES FOR DISINFECTING IN BERLIN.

A public disinfecting station has been established by the Berlin civic authorities, where as far as possible high pressure steam is employed. For such articles—leather goods, for example—as would be injured by this process, chemicals are substituted. The charge is \$1.00 for each cubic metre of space occupied in the disinfecting chamber, while the articles requiring chemical treatment are charged at the rate of 80 pfennings, or less than two cents each per hour of treatment.

THE BUTLER IN THE CESS-POOL.

A gentleman of means bought an old-time mansion on a fashionable street

wine, he rang the bell, but no butler replied. After ringing several times and receiving no response, he became angry and went to search for him.



in this city. Having some friends to dinner one evening and requiring more

The poor butler was finally discovered in an old cess-pool in the wine cellar,

the floor of which had broken in. After much difficulty he was extricated, just in time to save his life after much suffering and a month of medical attendance. It appears, that the existence of this cess-pool was unknown, and that as long as the sewage of the house went *somewhere* no inquiries were made to ascertain where. It is a fact that very many of the better class of houses in our older cities have no sewer connections, but drain entirely into cess-pools in the cellar. It must be obvious that it is very unhealthy to live over such a mass of corruption. The soil of the cellar must, in time, become saturated, and as we know that there is such a thing as ground air, and as the furnace heat must create upward draughts, how is it possible that the air distributed throughout the living apartments of the house can be otherwise than unhealthy? It sometimes happens (we have illustrated it in a previous number) that these cess-pools are dispensed with and sewer connections made. But it rarely happens, when this is done, that the old cess-pool is cleaned out and disinfected; it is left as it was, full of human refuse. There is not such a great difference between a full cess-pool under the house and a full chamber or commode in your bed-room, save that the former is hidden from sight, and we are quite sure that no sane person would tolerate the latter. It must be clear, then, that if human refuse allowed to remain in close contact with human beings is productive of sickness, as all unite in holding that it is, cess-pools under houses are dangerous to health and should be abolished. If any of our readers have been tolerating this nuisance and have been wondering why they had bad health, let them look to it. Let them abandon the cess-pool and let them seek connection with the

sewer, but let them do it properly. The cess-pool should be emptied (and this should be done in the absence of the family) of its foul contents, and should be filled with clean earth that has been previously mixed with chloride of lime or some other disinfectant. Do not, in the name of common sense, live any longer in ignorance of the disposal of your refuse. You know where your meat and potatoes come from, for goodness sake learn where they go to after they have served their purpose in your bodies and become refuse and are dangerous. You would not allow ashes of coal to accumulate indefinitely in the cellar; you have them removed, not alone because they take up space, but also because you believe that it is not healthy to have them accumulate; why, then, do you allow the ashes of the human body, that which has been consumed in producing life, to remain in your vicinity, when you know that they are infinitely more dangerous? A minute's reflection will convince you that we are talking common sense, and if you read this journal regularly you will soon come to realize that all the teachings of hygiene are brimming full of common sense.

ITALY AND HYGIENE.

ITALY seems resolved to be no longer behind Europe in sanitary investigation and practice. In view of the International Hygienic Congress to be held at Vienna in the September of 1887, she is already bestirring herself so as to take a prominent and effective part in its proceedings. Through the President of her Royal Society of Hygiene, she is urgently appealing to all Italians engaged, directly or indirectly, on that subject to assemble in force at the Congress, and by their contributions to its discussions, written or oral, to demonstrate the advance she has made in hygienic and demographic science.

A CELLAR KEPT DAMP FOR TWELVE YEARS.

THERE are certain laws in hygiene that can be stated with mathematical certainty, and one of these laws is that pipes should never be *hidden*; the plumbing of a house should always be so arranged that it can be readily inspected, and a plan of the plumbing should be considered as essential as a policy of insurance, the one serving to protect against loss by fire, the other against loss by sickness. In the case

joint, thereby discharging all the slops from above on the cellar floor, just as surely as though the servant had carried them there. We are all afraid of damp cellars, and it is obvious that if these pipes had been exposed to view the leak would have been readily discovered.

DISEASED HOGS IN AN ICE-POND.

THE discovery of a large number of dead and decomposed hogs in the lake near Medford, N. J., recently, by men

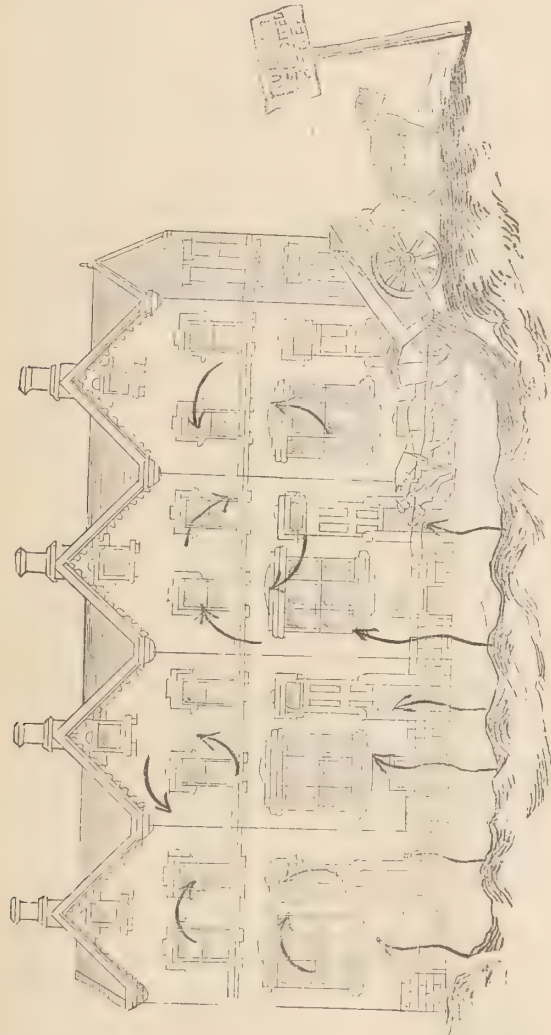


which our drawing illustrates, the cellar was so damp that it could not be used. The water was supposed to be surface water, and the question of an expensive drain to carry off the water was considered. A child in the family being sick, it was suspected that some insanitary condition might exist. It was found that a waste-pipe from a sink in the second story passed down to join a drain running under the floor. This drain had settled and opened at a

who were cutting ice, has created great indignation. The lake has long been depended upon for the regular supply of ice because of the purity of the waters. It was learned that the hogs had died some time since of cholera, which caused the death of hundreds of porkers in that vicinity, and many of them were thrown into the lake by the owners. The water has become very foul and unfit for use, and the stored ice will have to be thrown away.

BUILDING ON NEWLY-MADE MORAL OBLIQUITY OR IGNORANCE.

This illustration makes clear and forcible to the eye a danger to health that is well known and is found in



every city. It should be a rigidly observed rule that *made* ground should not be built upon within five years after it is made. The rubbish that is used to fill in always contains more or less organic refuse, which, undergoing decomposition, must necessarily give off vapors prejudicial to health.

The *Boston Medical and Surgical Journal* says that a case of peculiar moral obliquity or ignorance in an individual having in charge the care and instruction of the young has come to light in Winchester County, if the facts of the case are correctly reported. For a long time a very offensive odor, it seems, has been noticed at Lake Mohigan, and the attention of the Board of Health having at length been directed to the matter, an investigation showed that it was due to a sewer running directly from the Lake Mohigan Academy into the water of the lake. Not only has the principal of the academy permitted this disgraceful state of affairs to continue for an unknown period; but now that he has been requested by the sanitary authorities to remedy the evil, he flatly refuses to do this, and denying their authority to enforce an abatement of the nuisance, threatens a legal fight if they attempt it.

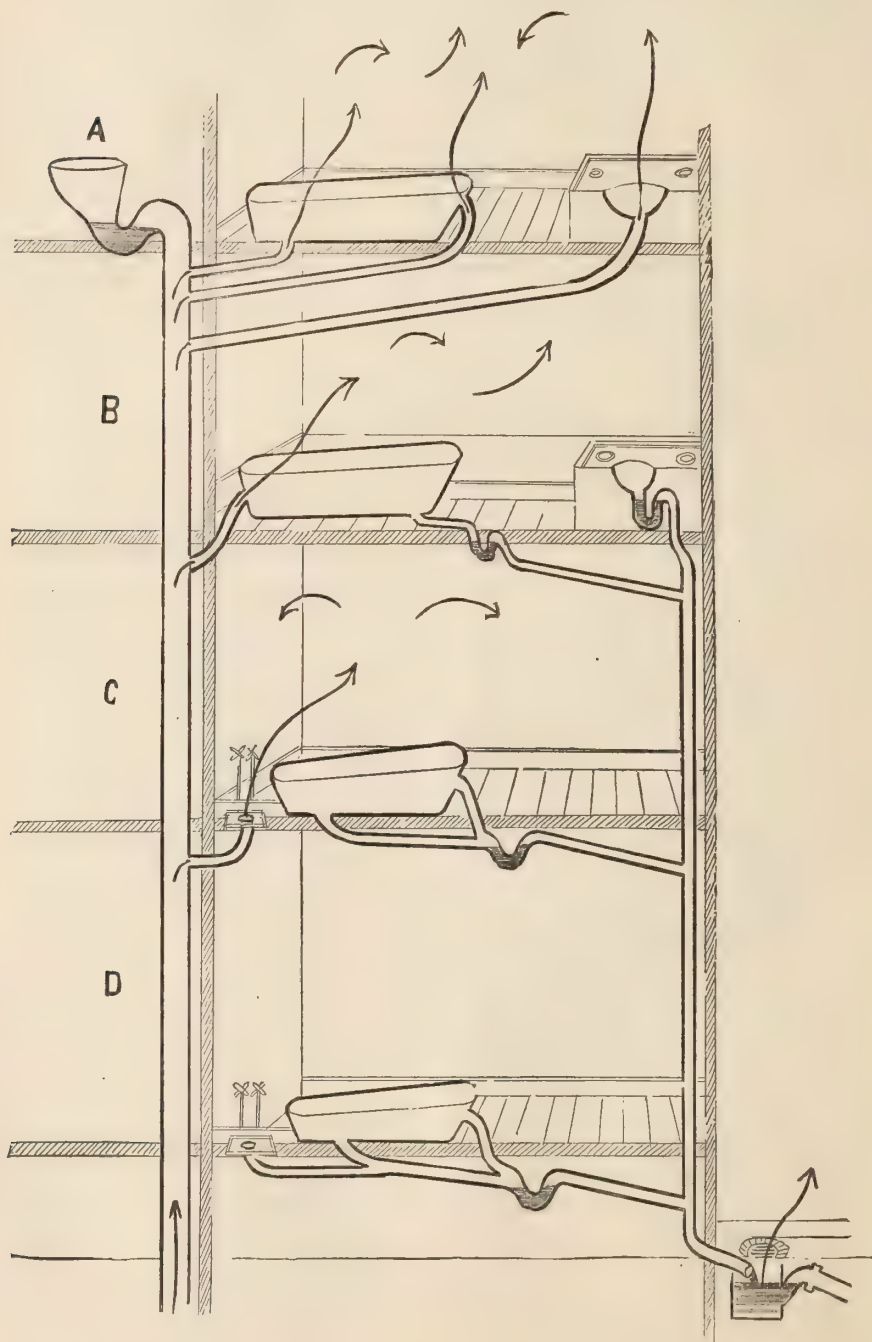
BACK NUMBERS.

THIS journal became the *official* organ of our State Board of Health last July, and with that issue we began the publication of the valuable papers read before our Sanitary Convention last spring. Some very valuable papers have appeared in the last six numbers, and we would advise those who contemplate subscribing to the journal to secure these back numbers. A remittance of *three* dollars will secure the journal from July, 1886, to January, 1888.

DEFECTS IN BATH-TUBS AND WASH-STANDS.

This illustration will bear careful

study, for it contains some very instructive lessons. At A we see the waste-pipe of a wash-stand and of a bath-tub, as well as the overflow of the



latter, passing directly, *untrapped*, into the soil-pipe of a water-closet. Of course this is all wrong, for there is not the least barrier to the ingress of sewer-gas, as the arrows indicate. Whenever, therefore, you see what is depicted at A, you can absolutely condemn it. At B we find two of the three defects remedied. You will notice that the waste-pipes from the wash-stand and bath-tub are not only trapped, but finally discharge into an open, ventilated gully outside of the house, which in turn discharges into the sewer, which is even a better plan than to have these drains (which only convey dirty water) communicating directly with the sewer, for this *ventilated* gully is an additional safeguard against the back flow of foul and dangerous gases from the sewer. These pipes have no connection with the soil-pipe of the water-closet as they do at A, but you see that the overflow-pipe passes directly into it. It is not uncommon to find that, the waste-pipe being trapped and properly delivered into a gully or drain, after a while the bath overflows. Another plumber is then called to add an overflow-pipe, who, ignorant of his business, takes the overflow, *untrapped*, into the newest communication with a drain, which is usually the soil-pipe of a water-closet. Hence, though your waste-pipe may be all right (as in B), do not be satisfied until you see what disposition has been made of your overflow. At C the overflow is made right; but here a word of caution is necessary. Sometimes the plumber will carelessly or ignorantly cause the overflow to enter the waste-pipe *beyond* the trap on the latter; when such is the case, it can be readily seen how the poisonous gases can get back through it. Another complication has

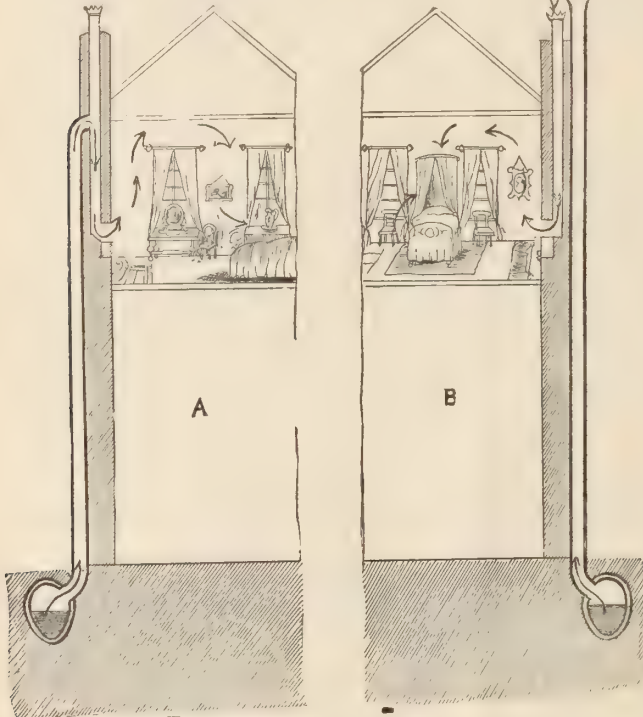
crept in at C. It is found that the children, when bathing, splash the water over the floor and it soaks through to spoil the ceiling of the room below. To prevent this a "*catch-all*" is put under the tub and the pipe from this is carried directly into the water-closet pipe, thus nullifying all the three other pipes. At D we see things as they should be. Here all three waste-pipes from the tub unite to form one which is *trapped*; the waste-pipe from the wash-stand is trapped and it unites with that from the bath to again form one pipe, distinct from the water-closet, which, discharging into a gully, thus forms another trap and this gully is open to the outside atmosphere. When you have such plumbing as is seen at D, it would be necessary for the sewer-gas to pass two traps and one ventilator before it could enter your house, and this we defy the most insinuating and penetrating gases to do, providing the traps are kept full and not allowed to evaporate and become pervious, as we have shown in a former issue.

HE DIED FROM TOO MUCH FOOT-BALL.

A leading member of the Yale football "team" lately died from the effects of the recent notable contest with Princeton, and the severe training which preceded it. Doubtless this young man is not the only one of his foolish kind who has reaped the fruits of a senseless and vicious practice. It is simply athletics run mad. A little while ago it was the same thing with boating, then base-ball and cricket, and now it is the most exhausting game of all. The way those young men "play" football puts every muscle and blood-vessel in their body to the utmost tension, and many of them will feel the ill-effects throughout all their future lives. Let us have sense as well as manly exercise and fun, in this matter.

VENTILATION OF DRAINS.

WE do not wish to be personal, therefore we will not mention the city when we say that on a recent occasion it was decided by a board of health that a certain privy well, into which the water-closet of a house was drained, must be ventilated. Fig. A shows how it was done. The ventilating pipe was carried through the privy roof and into the kitchen chimney, with the theory



in view that the kitchen fire would create an upward draught and thus carry off the gases. This is a very generally accepted view, but it is not a safe one. If an *active* fire were always kept in the range, then it would work very well; but this is not always the case. It will sometimes happen that the draught is *down* instead of *up* the chimney (as all will realize when they recall what difficulty they sometimes have to make the fire burn), and when such is

the case we have afforded a most excellent opportunity for these gases to enter the house. It will be well to remember that aerial dilution destroys the potency of noxious gases. Let a man drink half a tumblerful of raw whiskey, and the result will be disastrous; let him put the same amount of

liquor in a hogshead of water and drink as much as he can; the effect will be scarcely perceptible, because the dilution has been so great that he has received very little of the poison. So with poisonous gases; if they are conducted into and accumulate in our houses, then they become dangerous, while if they are conducted into the open air to be diluted by the atmosphere, the amount that could be inhaled would contain so little of the poisonous gases that the evil effects would not be appreciable. The question of ventilation is a question of dilution; by proper ventilation we either carry foul gases to the outside atmo-

sphere, or we bring the outside atmosphere to the gases, the result being the same in either case, namely, dilution. It must then be obvious that when we ventilate so that the gases are allowed access to the enclosed atmosphere of our rooms, our arrangements are faulty. In Fig. B the ventilating shaft is carried up separate from the chimney, but it opens too close to the mouth of the chimney, so that a down draught might here suck the

gases down and into the sleeping room. Another common fault (which we have illustrated in a previous issue) consists in allowing these ventilating shafts to discharge near a window. Having pointed out the defects, let us suggest a remedy. We would say that every drain should have a ventilating pipe just after it leaves the house, and this pipe should be carried up above your own and your neighbor's windows. It should be fitted with a movable hood; thus the air will create a current, carrying the gases away from the pipe, mixing them with the atmosphere, and securing the desired dilution.

DIGESTIBILITY OF CORNED BEEF.

THERE is a prevalent notion that salted meat is not so nutritious as the same weight of fresh meat. Dr. Smetzky, a Russian chemist and hygienist, has made some experiments, the results of which do not conform to the popular idea of the innutritious qualities of corned beef. This observer found that in the case of beef twelve months corned, the amount of nitrogenous bodies in a condition incapable of being assimilated was, on the average, 4.41 per cent., the maximal amount being 6.7, and the minimal 2.5 per cent. According to Ranke—a great authority—the amount of non-digestible nitrogenous matters in fresh beef is from 5.4 to 12.3 per cent.

Dr. Smetzky gives several analyses of corned beef. The composition which he ascribes to some of them is remarkable the proportion of fat being exceedingly low, and that constituent being absent in two of them. It is difficult, even by chemical means, to extract fat completely from meat, and in the corned meat sold in this country the proportion of fat has often exceeded 10 per cent.

PROPAGATION OF MEASLES BY HEALTHY PERSONS.

Le Concours Médical, June 12, 1886, makes editorially the following observations: The possibility of carrying the contagious principle of measles from place to place by the medium of the bodies of healthy persons was recently discussed by the Medical Society of Berlin, and one gentleman, Joel, of Lausanne, presented certain facts which led to the belief that such a possibility does exist, and that the medium is often furnished by the physicians themselves. One case which was cited was that of a boy who was brought from Geneva to Lausanne while he was passing through the incubation stage of measles. The butcher and the postman who served the institution to which the boy was brought conveyed the disease to their children, who were attacked with it in a short space of time, and what is quite remarkable, the children in almost every house to which the postman delivered letters were attacked. A little girl was brought to a hospital, and in a few days had undoubted symptoms of measles.

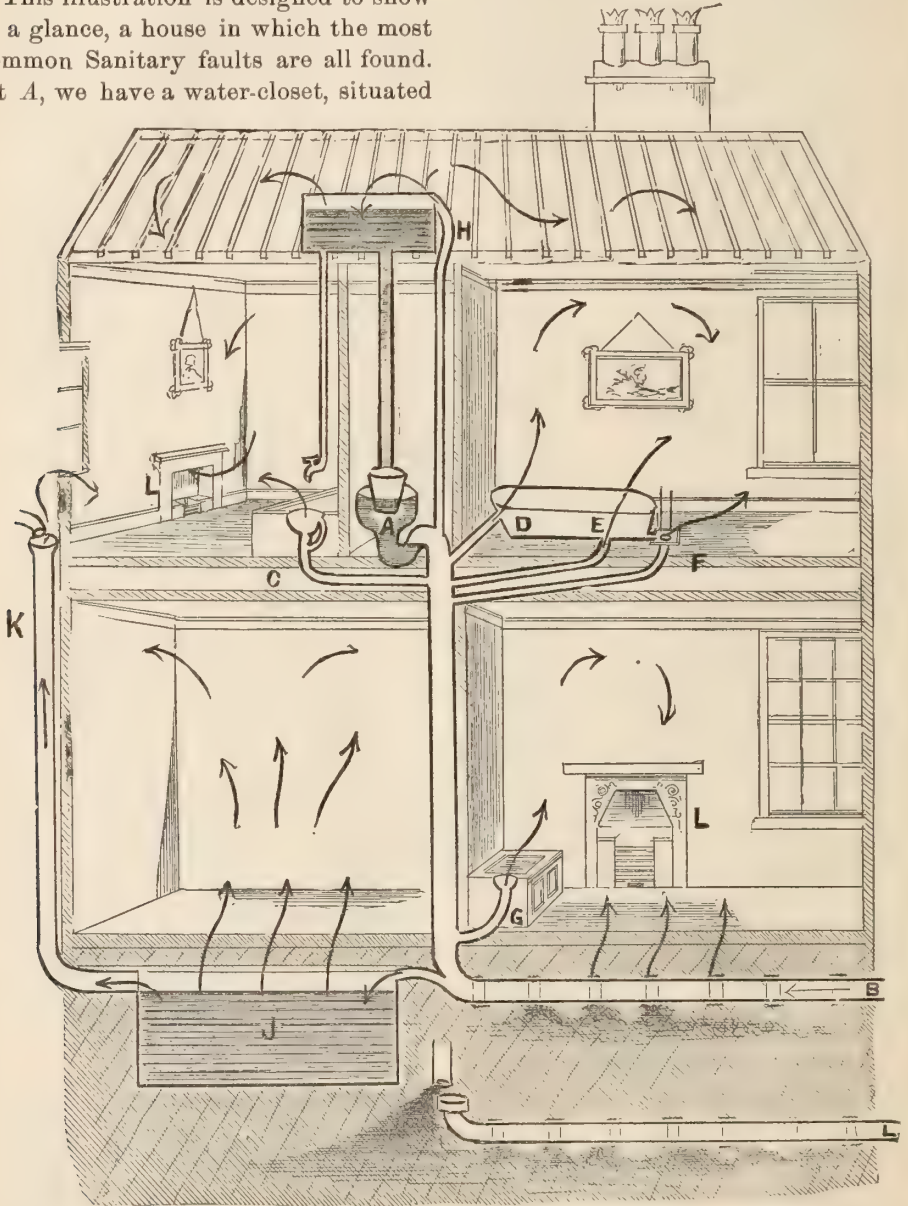
Her father had paid her several visits before the measles appeared, and it was ascertained that two of his children were suffering at his home from the disease. Eight other children in the hospital were quickly seized with it.

It is thought that physicians can not always avoid carrying the contagion with them, even when extraordinary care is taken. Prophylactic means on the part of the physician should be as thorough as possible, however, by disinfection, change of garments, and all other available procedures.

A HOUSE WITH EVERY SANITARY ARRANGEMENT FAULTY.

This illustration is designed to show at a glance, a house in which the most common Sanitary faults are all found. At *A*, we have a water-closet, situated

passage way, having windows on either side, by means of which ventilation can be secured. Of course such an arrangement can not be always secured



in the center of the house, which is the least desirable location. The very best site for a water-closet is in an annex connected with the house by a

and it is the part of the practical man to endeavor, not to suddenly revolutionize the world, but to meet matters as he finds them and suggest the rem-

edy that can be the most easily applied. Therefore we say, that if you are building or altering a house and it is possible to do so, put your water-closet in an annex as we have described. If this cannot be done, if the water-closet is in the center of the house and must there remain, then, after seeing that your plumbing is correct (see *A* in illustration on page 31,) suspend over your water-closet a large funnel-shaped affair of tin and carry from it a pipe up to and through the upper portion of the window. Have the funnel end of this affair over the gas-burner or lamp on the wall, which latter should be always kept burning. Thus an upward draught is kept constantly flowing from the water-closet, out through the pipe, whereby any gases that may come back on account of faulty plumbing will be carried up and out to the surrounding atmosphere. Any tin-smith could make such an apparatus at very trifling cost and the outlay for gas or oil would not add nearly as much to your annual expenses as the outlay for cigars or liquors, while the safety from disease thus secured would not be inconsiderable.

At *B*, we have a house drain under the floor of a room and we see that the joints are leaky, allowing sewage to saturate the ground and foul gases to escape into the room above. Of course if the water-closet is in the center of a house, the drain must necessarily pass under some floor, so that this defect cannot be obviated, but it can be reduced to harmlessness, if, instead of making this drain of terra-cotta with cemented joints, we use wrought iron pipes and securely bolt the sections together. Thus there can be no cracking nor separation of joints as would be the case with terra-cotta and cement joints. In addition to this the

iron drain should be laid in a box so that it can be readily inspected without the necessity of tearing up the floor.

At *C*, we have the waste and overflow pipes of a wash-stand passing, *untrapped*, into the water-closet drain, thus affording a direct channel for sewer-gas to be drawn by the fire (*L*) into the house. The remedy will be found illustrated on page 31.

At *D*, *E*, and *F*, we have defects that are separately indicated and the remedies pointed out on page 24.

At *G*, we have a kitchen sink, draining, *untrapped*, directly into the soil-pipe. Of course the remedy is two-fold, first a trap and second a separate drain for water from that for the closet as seen on page 00.

At *H*, we have a cistern which is used for the double purpose of supplying the closet and the family with water for domestic and drinking purposes. It will be seen that the overflow from this cistern passes directly into the water-closet drain, thus affording a ready means for the pollution of the contained water. The remedy will be found in the next illustration.

At *J*, we have a rain water tank under the house, and it may be here remarked that in certain sections of our country, tanks under the floor are exclusively relied upon for water supply. Without, at present, going into the merits of this system of water storage, (which we will do later) we call attention to the fact that this particular tank has an overflow pipe that is carried directly into the drain, which, of course, allows the water to become dreadfully polluted.

Then at *K* we see a fall-pipe which is used to carry the rain water from the roof of the back building to this tank: well, this pipe commences just below a window in the main building,

and as the water in the tank is befouled it gives off gases which ascend this pipe and pass through the open window.

At *L*, we see a drain under a house with uncemented joints leaking, also a defective junction of vertical soil-pipe with horizontal drain, while the drain itself is laid without the proper fall. Thus then we see a house where *everything* is wrong. There are many such houses and there is much sickness. Do not lay this journal aside until you have carefully studied this diagram, impress its lessons on your mind as you have the alphabet, and whenever you see a house with such faults avoid it as you would the Small-pox Hospital, for it is, at least, equally as dangerous, even though you may not think so. Take our word for it; for if you do not and go to live in such a house, the day will inevitably come when you will repent it.

HYGIENE IN DOMESTIC SERVICE.

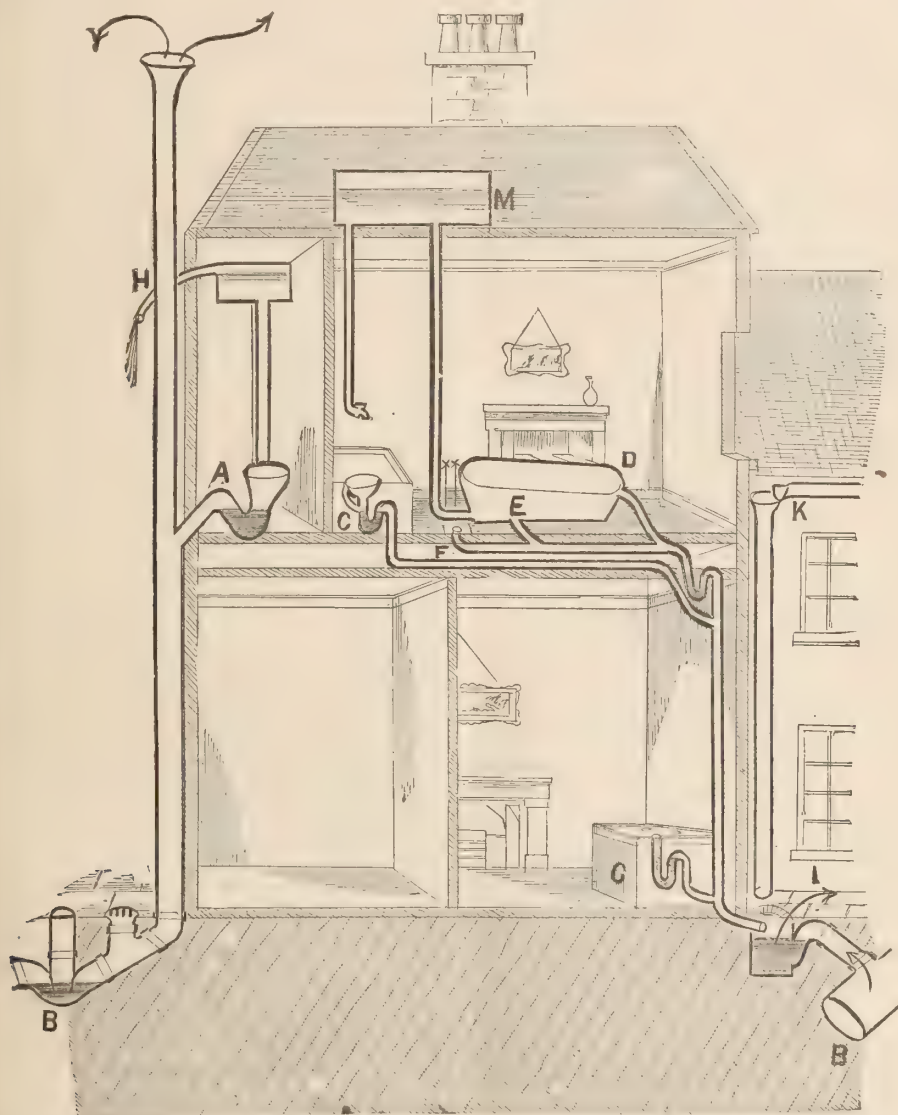
A FOREIGN exchange says: Every practitioner must have remarked the commonness of a certain type among the patients who come to consult him from the ranks of domestic service. We have chiefly in our eye female servants, for these especially exhibit the condition to be considered, though men and boys also, sooner or later, suffer in a similar way. The fagged and irritable heart, the watery but spastic pulse, atonic dyspepsia, and *malaise*, even apart from the evidence of a pasty skin and history of hard house-work, suffice for the diagnosis of anæmia. It is very common to find that the subjects of this condition have but recently come up from the country. They have exchanged the fresh air, regular hours of work and rest, and plain wholesome fare of their former homes or service, for the late work, the

early waking, and the small, unventilated sleeping-room of a city mansion. The relation between cause and effect is obvious. Hygiene is ignored and health suffers. What, then, is to be done? It is easy to point to the evil, but more difficult to devise its cure. We are convinced, however, that much could be accomplished by a reasonable exercise of common sense on the part both of masters and servants. More space, air, and sleep are required. By means of these the frame will be rendered fitter to meet and overcome the generally moderate fatigue of domestic service. With regard to air-space in servants' bed-rooms, it should not be very difficult to allot a minimum of 800 cubic feet per individual. Less than this must lead to impairment of health. Ventilation can, as a rule, be maintained even in our capricious climate, if servants can be taught that the window may be kept slightly open at the top without danger from cold. A room without free communication with the outer air readily becomes impure, and is unfit for habitation; a window is a necessity. Seven hours sleep for men, and eight for women, are generally admitted to be no more than essential, and might, with but very moderate forethought, be allowed by masters and mistresses to their domestics. We have not spoken of recreation. It is often difficult alike for servants and for comparatively independent persons to make due provision for this important factor of health. Something has, no doubt, been done by timely holidays. Measures like these which we have suggested must, if adopted, help and not hinder work, and must increase the well-being and just contentment of that large class on which every other class is, in so great a measure, dependent.

A WELL-PLUMBED HOUSE.

THIS plate is intended to show the reverse of the last, and to indicate the manner in which the faults there de-

is no necessity for the drain to pass under a floor, and we see a ventilating pipe carried well up above the roof of the house, and not in close proximity to the chimney or a window. We also



pieted can be remedied, but it does not profess to lay down a strict rule as to the best arrangements. Here the water-closet, A, is seen against the outer wall of the house, so that there

see not only a trap to the water-closet drain, but one also at B (ventilated) outside the house. We see the waste and overflow pipes from tub, washstand, and sink well-trapped and discharging

into an open gully trap at *L*. We see a separate cistern supplying water to the water-closet, with its overflow, at *H*, not discharging into a drain; and we see at *M* a cistern for washing and drinking purposes totally disconnected with any drain or sewer. At *K*, we see a full pipe delivering its contents into the ventilated gully, while at *B, B*, we see drain-pipes entirely outside of the house. It will be specially noted that no pipes run under the floors, and we should add that those running down the walls should be inclosed in boxes with doors, that they may be readily inspected at any time. Study this plan well, for here you have a house the plumbing of which has been done on sanitary principles, and the occupants of such a house need have little fear of sewer gas, provided always that their traps do not become valueless by evaporation, the result of disuse.

ABSENCE OF ILL RESULTS FROM CONSANGUINEOUS MARRI- AGES IN JAPAN.

AN interesting contribution to the study of consanguineous marriages occurs in the paper of Dr. Baelz on the Japanese, in the *Sei-I-Kwai*. He says: "Near the bathing resort, Atami, there is situated a small island named Hatushima. The inhabitants of that island, nearly three hundred in number, have, for more than two hundred years, exclusively married amongst themselves; strange blood has never entered the island. These people live by fishing, and from the proceeds of a small trade with the neighboring coast. They are physically and mentally quite normally developed, and their statistics show a larger number of births, and a smaller number of deaths in proportion than any other part of the Japanese empire."

TYPHOID FROM A SINGLE DOSE.

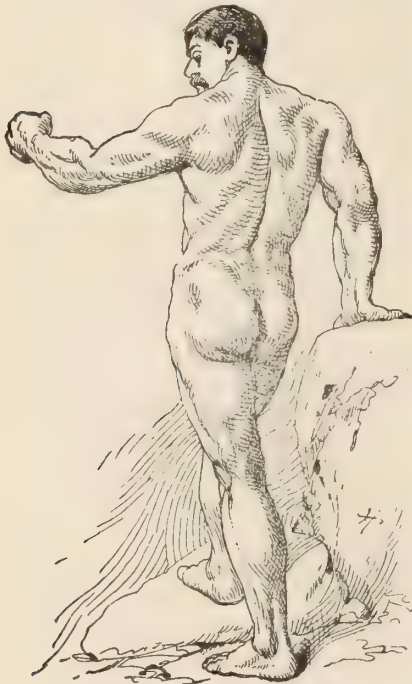
M. Dujardin-Beaumetz has forwarded to the Paris Academy of Sciences a communication on the Pierrefonds typhoid cases of last summer. M. Fernet, who occupies a high post at the Ministry of Public Instruction, his wife and family, hired a house at Pierrefonds, a fashionable resort near Compiègne, contiguous to two others. After they had rented it for the season they were told to beware of the water in the well. On this account they drank exclusively mineral water until the last day, when the stock was out, and the servants were too busy preparing to return to Paris to go to fetch some bottles from the chemist. Madame Fernet said, "For once surely there can be no harm in drinking the well-water." They drank it. Six out of nine persons have since died, including one of the servants. The cook, two of the four children, and Madame Fernet had had typhoid fever before, and though attacked again by it after their return from Pierrefonds, have got through the illness. The well has been examined and is reported to contain the bacilli which are believed to be associated with typhoid fever. This is a common danger to which visitors to so-called health resorts are frequently subjected. The facility with which well-water is infected is hidden from the population by the impunity with which filthy well-water may often be drunk by resident families who have become acclimatised, especially when that water is for the moment infected only by non-poisonous faecal matter, and this fancied immunity often leads to habits of carelessness, for which not themselves only, but their visitors have to suffer.

PHYSICAL CULTURE.

It is time for those who have the right to speak authoritatively to issue a vigorous word of caution against the excessive physical culture that is the rule of the day, more especially in our colleges and universities. It is an unfortunate fact that some physicians of prominence have sanctioned the violent methods now in vogue, and by so doing have given a dangerous encouragement thereto. We should stop to think that all physicians are not necessarily versed in the science of hygiene (though they ought to be) and that the fact of a physician (greatly skilled though he may be in the *cure* of disease) recommending this or that is not proof that the *this* or *that* so recommended may not be dangerous to the health of the individual. There can be no doubt that *violent* exercise is injurious to health. This we unhesitatingly assert, with the dogmatism of conviction because we know that it cannot and will not be questioned save by him whose enthusiasm makes his judgment unreliable. By *violent* exercise we mean exercise carried to the point where the heart is caused to beat violently against the chest wall. A man in perfect health should not be aware of the fact that he has a heart at all, neither should he know that he has a stomach. These two vital organs should perform their duties so quietly and unobtrusively that their existence should be known only by the results of their labors. Could our non-medical readers look into a human heart and see the delicate little cords whose duty it is to keep certain valves in position, and did they understand that every pulsation of the heart throws a column of blood against these valves and would displace them were it not for these cords; and did

they know that when these valves are displaced, when they do not fit their openings with the most wonderfully minute degree of accuracy, there has commenced what will ultimately develop into incurable heart disease. Did they realize that when the heart beats violently and forcibly the blood is thrown with so much greater force against these valves, when, of course, a greater strain is thrown on the delicate cords to keep the valve in position, and did they realize that these cords may sometimes snap under the strain,—did they comprehend all these points as the thoughtful physician must, then we are sure that there would be a universal outcry against any form of exercise that would cause the heart to beat so that its action became perceptible to the individual. We believe that excessive physical exercise does not confine its injurious influence to the heart, but we will confine our remarks to that organ at present, because what we desire is to indicate how physical development may be secured without injury to health. We believe that every man, woman and child *ought* to develop the muscular system, and that they will enjoy better health and longer lives therefor, but we believe that they should do so with reason and judgment and not in such a way that while they are becoming marvels of brute strength they are ruining their vital organs and are sowing the seeds of invalidism and early death. But how? A man six feet two and a half inches in height, with a forty-six-inch chest, seventeen-inch biceps and every muscle of his body perfectly developed, ought to know something about the subject of physical culture and be able to give points to flat-chested, puny people of sedentary habits. John Lafin, the "model man" of the Vienna Exposit-

tion, but a resident of New York city, answers the description and is an enthusiast on gymnastics. He is an accomplished athlete and a champion in several lines. For several years he stood in the Paris Life School for Gerome and many other famous painters of the human figure, and he has drawings of his form made by these, which show him to be one of the few perfectly formed men. In response to the request of a correspondent of the Phila-



LAFLIN DRAWN BY JEROME.

delphia *Times* for a talk on the subject of exercising for health rather than for special development, Mr. Laflin said:

"One need not train like an athlete, and a man does not require a physique like mine to be perfectly healthy. But if men and women could be kept healthy for a few generations physical development like mine would be the rule, not the exception. Nine-tenths

of the diseases that now keep the doctors busy would be absolutely unknown.

"The amount of exercise necessary to keep the body in good condition is less than you might suppose. Fifteen minutes a day rightly employed will do wonders. A person ought to exercise a few minutes in the morning, and then take a sponge bath in salted water, followed by a vigorous rubbing with hair gloves or a coarse towel. The movements of the muscles starts the impurities to the surface and the bath cleans the pores. The exercise ought to be light. I don't believe in exertion that taxes the muscular strength. Heenan and all those old-time athletes thought they must use hundred-pound dumb-bells and trot around with great lead soles on their shoes. That made them heavy and slow and exhausted their strength needlessly. One-pound dumb-bells are heavy enough for anybody, and Indian clubs should not weigh more than four or five pounds at the outside. Gymnasts should not use heavy weights at all. What is needed to develop muscle is movement, action, not strain. You don't train a trotter by hitching him to a loaded coal cart and making him drag that around the track. Hanlan doesn't get into a whale boat for a scull race. The lifting of heavy weights is bad for a man, and the men who have trained themselves to lift a ton killed themselves. Over-training and over-exercising of any kind is injurious, and that is why college boat-racing is not always a good thing. The weakest man in the boat must work too hard. A man is only as strong as his weakest point, and you put too much strain on him and he will give way at that point. That is why I advocate light exercise for health. The exerciser never should get tired."

"What do you think of the usual gymnastic apparatus?"

"Well, I think it ought to be split up into kindling-wood. Young fellows get into a gymnasium and see an athlete on the bars. They try to do what he does and the chances are they fall and break bones or strain beyond repair some chord or muscle which they have not been accustomed to use. All exercises that bring the weight of the body on the arms stretched above the head are bad. The position is unnatural and strains the chords of the breast. Horizontal bars and the rings are not health-giving devices. A man wasn't made to hang head downwards. If he were he would have a prehensile tail. He can get all the exercise he needs with his head higher than his feet and his blood flowing in its natural course. I don't approve of foot-racing either, because it puts too much strain upon the heart and blood vessels. Moderate running, however, is all well enough when one is accustomed to it. Some people think walking affords all the

enough. Carried to an extreme it is positively bad. If you ever develop one set of muscles and neglect the rest the neglected muscles and organs deteriorate as fast as the others develop.

"Take ballet dancers, for example. They get their legs in prime condition and can perform wonders in the way of jumping and kicking, but they grow narrow chested and thin necked, their stomachs get disordered and nearly all of them die of consumption. A ballet dancer's training consists of catching hold of a bar with her hands and raising and lowering the legs alternately for hours at a time. All their strength goes into the muscles of the lower limbs. An extreme case of uneven muscular development is that of a blacksmith who used to pose as a model in the life school here.



BALLET EXERCISE.

exercise one needs, but that is not so. It exercises only the legs at the expense of the body. It is good, but it is not



A BLACKSMITH'S ABNORMAL ARM.

"His right shoulder and arm were enormous, but otherwise he was not muscular, and his left arm was as small as an ordinary man's. Of course that right arm was all that an artist wanted him for. By itself it was splendid, but taken in connection with his general build it was deformity.

"The best all-round exercise, without doubt is rowing. It brings all the muscles into play, particularly those

least used in ordinary light exertion. The sliding seat, first used by Walter Brown as an improvement on the oarsman's expedient of greasing or soaping the seat of his trousers, proved to be not only a good thing for racing, but a great improver of rowing as an exercise. It brings the muscles of the legs, loins, stomach and back into better action. For women nothing is so beneficial as rowing. Most of them foolishly put the abdominal muscles out of commission by wearing corsets and tight clothes, and all kinds of diseases are the results. Only civilized women have these troubles. The Indian mother walks about freely with a day-old child in her arms. The white lady says that is vulgar and like the animals. Well, the white lady is an animal, and usually a very unnatural and poor specimen of an animal at that. It is the animal in us that keeps us alive, and if we neglect it we pay the penalty in disease, suffering and premature death. Women who are weak, suffering and unable to get any comfort in life could cure themselves by rowing. It is not convenient for everybody to have a boat, but there are rowing machines that answer the purpose just as well, and can be used at any time in the house. They have sliding seats and can be adjusted to any required pull. A light pull, such as would be got in a shell, is the best.

"Small dumb-bells are good also. One can exercise a great many muscles with them, and, by using one-pound bells, the danger of injury that formerly accompanied this style of exercise is avoided. Using heavy bells is worse than useless. You can get up all the perspiration you want by swinging a pound of iron in each hand, in lively fashion for a minute or two.

"Another good apparatus, and a cheap one, is a striking-bag. It is easily made. Put a ring in the ceiling, tie a stout cord to the ring, and at the lower end of the cord fasten a foot-ball, to hang at about the height of the chin. To the lower side of the foot-ball attach a piece of rubber gas-pipe and make the end fast to a ring in the floor. That prevents the ball from flying all about the room when struck and brings it back quickly. Punching that foot-ball is pretty lively work and the best kind of exercise for a boxer. Then the rubber straps with handles, which can be obtained almost anywhere, give a great variety of exercise, are inexpensive and take up no room. With such apparatus a man can have a gymnasium at home, and one hour out of twenty-four devoted to exercising and rubbing will keep anybody in good condition and make him healthy and cheerful, if not wealthy and wise. Swimming is one of the best exercises, but unfortunately the opportunities for indulging in this sport are limited. It is good for the arms, legs, back and almost all parts of the frame, and it increases the lung power better than anything else.

"One of the most finely developed women in the world is Miss Beckwith, the swimmer. She is very strong and her health is perfect. A city could not spend money better than in the building of free swimming baths that could be used all the year round. The ancients did these things better than we do. In Rome the baths were the biggest public institutions. In England some wealthy and public-spirited persons have started a national physical recreation society for the benefit of the working people. Herbert Gladstone is president, and among the directors are General Wolseley and Sir

Charles Beresford. It is the beginning of a good movement, and I would like to see it imitated in America.



MISS BECKWITH, AQUATIC ATHLETE.

Professor Laflin was one of those athletes who tested the mysterious power of Lulu Hurst. He says: "There is nothing mysterious about it. The whole affair was a transparent trick. I hold this cane rigidly in my hands. You press upon it with your open hand and I brace to resist the pressure. Suddenly you draw your hand in the opposite direction and I stumble forward in the direction of my effort. You can make me travel all over a room that way. If you have rubber-soled shoes and I haven't, the more you can make me stagger and slide about. Miss Hurst was a strong girl and she had some cute tricks of using her hands, and that is all there was in the show. In trying to resist her, you simply gave her the opportunity to make you dance about to keep your balance."

We have made long extracts from this interview because it contains a

vast deal of good, sound common sense. We would remind you that exercise means *motion*, not *strain*. You may walk, row, ride, run, swim, play base ball, or do what you please to bring the various parts of the body into motion, and so long as you do not materially increase the rapidity and force of the heart's action, you are doing good; but when you get out of breath and your heart throbs violently, you are injuring yourselves as surely as the sun rises and sets, though you may not feel it until the buoyancy and recuperative power of youth have given way to what should have been, but owing to your imprudence is not, the *prime* of manhood. Athletic contests of all kinds must be universally and unqualifiedly condemned, simply because when engaged in them the caution we have enunciated *cannot* be observed. When a young man has entered a contest he must and *will* go on to the finish, no matter how violently his heart may be beating. Hygiene is a science, and we wish to formulate exact rules, so that those who desire to lead healthy lives may not be bewildered by vague theories, but have definite, absolute rules to guide them. Hence we formulate the following rule for "physical culture:" "*Move* every portion of the body in whatever way and by whatever means you choose, and as soon as you find yourself getting short of breath, and feel your heart beating against your chest, cease *at once*, and rest until the normal condition is restored." Thus, and thus only, can you secure physical development without injury. Here you have an absolute rule for your guidance. In our issue for last September we published a number of diagrams that will greatly aid him who desires to secure healthy physical development.

WOMAN'S DRESS REFORM.

Perhaps the most prominent of all the leaders in the movement for reform

few years ago, attracted considerable attention as a lecturer on various subjects. Believing that nearly if not quite all of the evils which women nowadays



in the matter of woman's dress, (says *The Philadelphia Times*) is Mrs. Jenness Miller of Washington, whose portrait accompanies this sketch, and who, a

suffer are due to the fashions of habit now in vogue, Mrs. Miller has undertaken the work of bringing such reforms about as seem to her practical

and easy. She appeared, but a few weeks ago, on the lecture platform at the capital, and, being well received there, afterwards invaded New York and Boston. It is a favorite theory of hers that all women can be well and beautiful, and she presents in support of her theory the fact that the ancients who paid daily attention to bathing, were a race magnificently developed, and she cites further that their power was lost, not through any affliction which they were unable to avert, but through the acceptance of luxurious and enervating customs such as have obtained among us in many places.

Mrs. Miller is a Boston woman by birth, and prior to her marriage had won considerable fame in Massachusetts and the Eastern States as a woman of letters. Her maiden name was Alice Jenness, and she traces her ancestry back to that illustrious stock which gave us Wendell Phillips and Oliver Wendell Holmes. Her arguments against the standard fashions while not novel are originally repeated, and she practices in her own life what many reformers do not, the doctrines she insists that others shall accept. Her gowns are loose and flowing, without either sash or belt, having more the appearance of morning robes than of dresses for afternoon or evening wear, and she spurns the use of corset, bustle and stays of every kind.

As a speaker Mrs. Miller is said to be very entertaining. She has a strong but not unwomanly presence, and every movement of her well-developed limbs, whether in posture or repose, is the movement of grace itself. Since she adopted the style of dress, which she now asks other women to wear, she is said never to have been ill an hour. Unlike some of the reformers of the day, she is not masculine in anything.

It is her theory that whatever reform is accomplished in this respect must be accomplished by womanly women, of whom she "is only one." Socially she is a delightful companion, being bright and witty, as well as beautiful and well.

HOUSE PLANTS AS SANITARY AGENTS.

For many years the impression, among those who thought about it, has been that it is unhealthy to have growing plants in the bed-room and on this account these beautiful additions to our homes have been discarded. It is with real pleasure that we now learn from reliable authority that this fear has been groundless. Not only are growing plants not injurious to health, but they are absolutely beneficial, in so far as they serve to purify the atmosphere of our sleeping rooms. Dr. J. M. Anders (who has had many years of practical experience to fit him for the task) clearly demonstrates in his recent work "HOUSE PLANTS AS SANITARY AGENTS," the fallacy of the ordinarily accepted notions. This most readable and instructive book (intelligible to all) will be sent by mail from the office of this journal upon receipt of the price \$1.50. We cordially urge all to read it.

DR. NAPHEY'S WORKS.

We desire to call especial attention to Dr. Naphey's various works, advertised in our advertising pages. Dr. Naphey was a rarely fluent writer, and possessed in a remarkable degree the very unusual ability of being able to handle delicate and usually forbidden subjects in such a way that they become, both scientifically and popularly, extremely valuable. We do not hesitate to say that his series of books is unique.

HOW DISEASE SPREADS.

Last week an incident occurred in the neighborhood of the writer's home (says a writer in *The National Druggist*), which may serve to show why it is such a difficult matter for boards of health to control epidemics of diphtheria and other infectious diseases. About two weeks previously there appeared a red placard on the door-post of one of the houses, with "Notice! Diphtheria," etc., and the house was accordingly shunned by the whole neighborhood. The patient, a boy of eleven, died, and from the writer's house, next morning, could be seen the servants of the neighborhood running over into this infected house to see, no doubt "how natural" the poor victim of diphtheria looked when in his coffin, and, incidentally and unintentionally, to carry the contagion to the houses in which they were employed. Then came the funeral, and dozens of men, women, and children (the latter playmates of the dead boy) crowded into the rooms to hear the funeral services, and afterwards to accompany the procession to the cemetery.

The members of the stricken household, with clothing exposed for weeks to the infectious material of diphtheria, occupied a carriage, which, no doubt without airing or disinfection, was for hire to anybody else, perhaps a light-hearted and happy family of sight-seers, who want to visit the parks, and who may afterwards be much puzzled how their loved child contracted the terrible malady that carried it to its grave.

Perhaps a child of only a year or two of age dies of diphtheria, and then a hearse is often considered superfluous

expense, and the body is conveyed to the cemetery in the same carriage with the mourners.

We scarcely pity the criminally careless and thoughtless people who attend funerals of others dead from infectious diseases, and if they alone had to suffer it might be a good plan to let them contract some epidemic disease, and let them die as soon as possible; but they cannot suffer alone, but bring sickness and sorrow and perhaps death to many an innocent household. The public should be taught the folly of wantonly exposing themselves to such risks, and the pharmacists can do a great deal in bringing this to their notice.

SOCKS OF NESSUS.

A correspondent thus writes to the *British Medical Journal*: "I should be glad to know whether any steps could be taken by the Board of Health, to stop the sale of socks dyed with irritant dyes. I have recently seen several cases in my practice of severe irritation and skin-disease caused by wearing for several days in succession socks—woolen and silk—dyed with bright red, and yellow stripes or mixtures, of a color very attractive to the eye. The eruptions produced have been of a severe character, and, in one case, erysipelatous inflammation. On examining the socks, I found, in two instances, that picric acid was present. The other dyes appeared to be impure aniline dyes, with traces of arsenic. It seems to me that steps should be taken to have these "socks of Nessus" examined. Other medical officers of health might, with advantage, look into the matter, and you would render a public service by ventilating the subject."

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Communications.

WHAT THE STATE OWES TO THE PEOPLE AND THE PEOPLE TO THE STATE.*

BY THE LATE HON. ERASTUS BROOKS,
OF NEW YORK,
Late a Member of the New York State Board
of Health.

What the State owes to the People and the People to the State is, briefly condensed, the subject of my address. The two subjects in their conclusions are practically one and as closely knit together as a common object and interest can make them. The text is that "public health is public wealth and personal health the greatest blessing that God or man can give to country or mankind." To embrace this faith we are simply to believe for both State and people that "he is a freeman whom the truth makes free, and we are slaves beside."

The only authority I have for what I may say is from sources as open to those who hear me as to myself, and as a layman they are drawn from some

experience in the State, not in what belongs to the great Science of Medicine, but to the common sense observations of a citizen of the State trying to serve the people as a State Commissioner of Health and once in places of trust in two of our National Health Associations. It has passed into a proverb that "virtue has its own reward," and in my case, as with thousands of others, the compensation, and no other is asked or would be accepted, is the satisfaction of trying to do some good, and no evil, to the State and to the country. So much every man who can, it seems to me, owes to the commonwealth of which he is a citizen.

All the time we are learning something in science and especially in medical science. In what belongs specially to micro-organisms there was never in the past so much general study and interest as at the present time. These organisms exist in the air, in the water, in the body, in plants, in the soil, and everywhere. I am glad to know that they have their good as well as their bad side. In the great economy of nature for example, these microbes, in the nitrogen they possess, contribute in plant life and food-life to the benefit of mankind. We know but little at best of this germ life, of bacteria, germs, and the concealed organisms in everything that has real or apparent

* The Annual Address before the State Board of Health of Pennsylvania. Delivered May 12, 1886. From advance sheets of Annual Report.

life. But we know enough to learn more. One fact is now recorded as certain that they may and do assist nature in the preservation of our lives and in the use of our food.

THE FIRST GREAT OBJECT OF GOVERNMENT

is the diffusion of knowledge and the enactment of laws for the regulation of States, communities and persons; among the first of these duties are provisions of law for the safety of the people. To secure "life, liberty and the pursuit of happiness" is a principle of government older than the constitution, and as such was embodied in the first record of our national existence. It is safe, therefore, to say in the beginning of what we have to present that there can be no real life nor true happiness where the public health is not provided for by law; and that the State is only in the discharge of one of its first duties when it seeks, under reasonable laws, to maintain the chief end of its existence.

In the Congress of the United States, and in the legislatures of States and Territories, it is exceptional to find members of the medical profession. Here and there only, it is also true, are found men who unite an interest in the political and physical welfare of the State. In a certain way we all seek that "good digestion which waits on appetite," looking for "health on both." But far more than in what we eat and drink and put on and put off, we can digest our words, our thoughts, and living. Laws are digested and have been from the order of the Roman Emperor Justinian, now nearly 1,400 years since, to the present time. In food for the body, as in light and air for the abodes of men, the work to be done is to arrange, classify, dissolve and distribute whatever in the one case is nutri-

tious from whatever is otherwise; and in preparing whatever is put into the stomach for conversion into blood and into chyle or chyme; in the other case the work to be done is to arrange, classify, work over and distribute, for the use of others, whatever is necessary in books and letters for the instruction of mankind.

REDUCED MORTALITY AND GENERAL HEALTH.

To most physicians belongs the important duty which may be presented in the three aspects of reducing the mortality among the people, of saving the people from physical pain, and of curing the sick. If to do all this is not to make "a voyage of discovery" and "a circumnavigation of charity," then no such voyage can be taken in the journey of life. I know no work of equal value, nor any kind of labor calculated to promote so much human happiness.

In political governments the people are bound to seek and to enjoy, if they can, their political preferences for principles and persons. Whether in majorities or minorities one side will govern and the other side must obey. The two are essential to the welfare of the State; but while this is true there are in all States and communities, unities and necessities, more essential for the public good, and upon which there can be no safe divisions of opinion as to the proper uses of the authority of the State.

We may have diversities of opinion as to causes of disease, remedies for cure, as to climate and exposures, habits of living, the safety of buildings, the best methods of drainage, sewage, and ventilation in dwellings and workshops; but science and experience will in time solve all these differences into

some best practice or system, while in all that belongs to duty to be performed, or to neglect of duty commanded to be done in questions relating to the public health, there can safely be no divided counsels.

I place health as among the first, if not the first, in the science of political economy. It is a question which belongs to the wealth of the nation and to the prosperity of the people. The man or scientist who is capable of discovering or curing disease, and whom by custom we define as a physician, is, in the established meaning of words, an experimentalist in physics and a natural philosopher. The doctor, in brief is a person recognized in law and practice, as one skilled in the art of healing the sick through the agency of proper medicines, and it is this healing of disease in its effect upon communities which covers and governs a material fact in political economy.

We know what ravages yellow fever has produced in this country and in the world, how many lives it has destroyed, how much misery it has produced and distributed, how much wealth it has diminished. The lessening or removal of the prevalence of this calamity has been partly the work of physicians and a large share of it belongs to the nursing of liberal and intelligent men and women. This work, often a volunteer service, was inspired by the noblest motives, and has again and again, and especially in this section of the country, produced the grandest results.

The State politically, but not in the sense of party politics, and the people personally, in every sense I need not say, have the deepest interest in what is called State preventive medicine. Disease among a large class is often but another name for poverty, pauper-

ism, orphanage and bankruptcy. In Philadelphia in 1871-72, some 4,500 people perished from small-pox. The reported loss in business here at that time, and from this disease, was \$16,000,000, besides a cash value in human lives of \$5,000,000 more. New York city was also a great sufferer at the same time and from the same cause, while Baltimore, Boston and Providence and other cities resisted the disease and prospered greatly, owing to a timely and thorough vaccination of the inhabitants.

The State imposes certain qualifications not only upon dealers in drugs, but upon physicians, before they can practice in the great art of prescribing suitable remedies for disease. A more important State duty is the enactment of wholesome laws to prevent disease. This is done without infringing upon the personal or political rights of any citizen.

The first duty is to remove the causes of pestilences and epidemics, foreign or domestic; and where these unfortunately prevail the second duty is, by vigorous administration of proper laws to prevent their spread, and put an end to their existence. When the pleuropneumonia came into the United States from Holland—once the great depot of this disease in Europe—and when, to an alarming extent, it was carried into England, the realm there, and the State and Federal governments here, did not hesitate to act forcibly and promptly for its removal. Holland, profiting by experience and energy, reduced by inoculation, the disease to one or two per cent., and finally stamped it out. If Massachusetts and other States have accomplished a great work in preventing the lung plague in cattle, what ought not all the States to do in preventing even a worse disease in men women and children?

A decent care for the people by the State and a decent respect for the government by the people establishes reciprocal relations that no party can neglect. The lives, health and happiness of all classes of citizens depend upon these mutual observances of duty; hence the existence of the State Boards of Health, created by law to discuss and enforce obedience to the laws passed. The law, in all its provisions, is for the common good. It is a simple application of the science of medicine in the form of remedies or preventions to the people of the State. It teaches mankind not only the inestimable blessing of light and air and water, of ventilation and drainage in dwellings and places of business, but the absolute need of the best use of these great gifts in nature, chemistry and discovery.

HEALTH LAWS AND THEIR WORK.

It is demonstrated in the city from which I come, that thousands of young lives have been saved yearly for twelve years and more by the enforcement of health laws passed by the State. Recent New York laws relating to the tenement-houses impart great comfort to their poor occupants and add largely to the number of lives saved.

The death-rate of the city now numbers between 27,000 and 30,000 each year, and one-third of this number of lives could be saved if the best health laws could be enforced. Eminent physicians, verbally and in their written reports, assure me that one-third or more of the prevailing sickness in town and country could be prevented by the observance of sanitary laws. Mr. Edwin Chadwick stated years ago to the British Scientific Association, that both sickness and death-rates had been reduced one-third by the practice of sanitary laws,

and that the death-rate in the old districts has come down to sixteen or seventeen in each thousand persons. With no over-crowding and with a proper supply of water and surface cleansing, the death-rate can be reduced to ten in the thousand, which is one-half less than the mean death rate among the general people.

More remarkable than even this promise, but resting about upon the common sense rules of fidelity in public service—and adding, perhaps, a becoming sympathetic interest in the happiness of mankind—is the statement that in well-governed institutions for children between the ages of three and fifteen years, the death-rate can be reduced to two-thirds of the number generally prevalent, or to three or more in each 1,000 children, and with a corresponding immunity from all common epidemics.

Even in the British reformatory prisons, by the careful use of preventive medicine, the death-rate has been reduced to three in the thousand, with a general exemption from diarrhœa, dysentery, typhus fever and eruptive diseases. The diseases belonging to the respiratory organs are also reduced to one-half.

The cholera epidemic, which prevailed in England in 1832, frightened the people there into the necessity of securing more of the decencies of life than had before been enjoyed. The panic of a scourge, like most other panics, prompted many of the people to put on their thinking caps, and from the consequences of the cholera came, in the course of ten, twelve and fifteen years valuable government reports and laws.

These laws, if Dr. Bowditch be correct, are in advance of the laws of all other countries; and one man, Dr. Farr, was the bright particular star in this work of sanitary reform, not only for

Great Britain, but in many other parts of the world. If disease spreads by contagion, so also good example and benevolence inspires imitation. The great pioneers of the world in discovery and work have proved the greatest benefactors, and to the good beginnings at home and abroad we owe to-day the existence of twenty-eight State Boards of Health in thirty-eight States of the Union, and all these have been established within sixteen years. Lord Derby long ago declared that "no sanitary improvement worth the name will be effective, whatever acts you pass or whatever powers you confer on public officers, unless you can create an intelligent interest in the matter among the people at large." Lord Beaconsfield spoke the truth for his own country when he said, as prime minister of England, six years since, that "the health of the people is the first duty of the statesman." This sentiment is at least equally true in a country of such enormous proportions as our own, and daily increasing, not only from its own inherent growth, but as the destined home of millions now in the world.

The government and the States are not asked for what so often excites and thrills the body politic by the possession of the place, patronage and power, but simply to engage in the paternal work of saving lives and promoting the health of the people. The appeal is to the common sense and practical humanity of members of Congress and of the legislatures of the States. The motives for this needed work are of our best natures, "since the greatest good of the greatest number of people," is all that is asked.

If, when governed by such considerations, the people refuse to act, the law here as abroad must take its course, and penalties be imposed for its violation.

Nor is it enough, as expressed a hundred years ago and more by Edmund Burke, that "*men mean well*." It becomes them to do well." You are asking nothing new of the State or Government. Centuries ago the Republics of Greece and Rome had their sanitary laws, and the argument then as to-day, as a part of the important work of the period, was that physical culture would secure physical health. The old Romans had their systems of ventilation, drainage and sewerage, their splendid aqueducts, baths and pavements, and all of them promoted the comfort, and convenience of the people. Sanitary law also was a part of the Mosaic law, and in practice better at times than the customs in our own American towns and cities in the closing years of the nineteenth century of the Christian era.

Among the lost arts and blessings of mankind unfortunately were the lost codes of the law relating among other things to the public health. The code of Justinian and the laws of Lycurgus, with the laws for justice and health went into decay, and for a thousand years and more books and learning, and in a certain sense, deeds of practical charity were confined to the monks.

It was a long forgotten lesson among general teaching that "cleanliness was next to godliness," and therefore a very close neighbor to all kinds of practical piety. Hence, clear up to and far into this nineteenth century, came agues, malaria, small-pox, cholera, scurvy plagues, and pestilences, and all the inherited ills of life to which, from negligence and ignorance, flesh and blood are exposed. Happily for the world, public opinion is now more aroused than ever before in the interest of the public health, and the subject reaches us in the threefold of economy, thrift and morals.

If, as alleged by way of criticism, the

health service is costly, it can be proved to be the best possible investment to meet the cost. We began in the New York State Board with an appropriation of \$15,000, and it may be more or less hereafter. The City Board of New York asks for the year 1887 the sum of about \$275,000 and now for general work \$20,000 and has money well invested in buildings, and institutions. In saving health and lives it will save more for the city, in income and taxes, than any general investment of skillful financiers. If to this result the money value of life is counted, the five or six thousand lives yearly saved will run into millions of dollars. In Great Britain they place this kind of a value on human existence, just as we say in the United States that the cash value of every able-bodied immigrant from the Old World is \$1,000. There Dr. Farr—perhaps the highest authority in the Old World—placed in his report as the registrar-general of the government, the money value of each man, woman and child in the United Kingdom at \$795. The neglected preventable deaths in England and Wales during the school period, apart from infant mortality, makes a loss to the State of \$95,000,000. The estimated value of lives lost in the cases of preventable deaths was estimated at \$200,000,000 in a population of fifty millions of people in the United States alone and the people now number nearly 60,000,000. The British life insurance companies and friendly societies also give the money value of work lost by sickness. For every death there were, as proved on a careful investigation by the government, two persons sick and disabled, thus making a loss for each death of 730 days in each year. This result is reached by placing the minimum of the entire population at the sum of \$795 here named, and to these

figures are added 50,000 lives annually in the school age in England and Wales alone, which might be saved. But such statistics are exhaustless, and I must leave them for more practical conclusions.

In considering the subject of State law and personal work it will be wise to recognize the principle in regard to disease—especially is this true in cases of quarantine—that it is not places, but *principles* which secure public health. This rule applies alike to the ship, the shop and the home. Ship fever, under proper treatment and practice, has become what Dr. Vanderpoel called almost a mythical disease, and by simple cleanliness is now easily mastered.

Cholera latterly has been the one disease most dreaded because it is very insidious in its visitations. It comes to us specifically in old clothes, worn or concealed, in tangible filth, capable of removal by proper disinfectants or in unventilated trunks, garrets, bundles of imported rags, sinks, cellars, yards, cess-pools, and in like combinations and accumulations. Whatever may be said of germs or poisons in the human body, the conviction is that outside the human body there are, as a rule, positive preventives of cholera, in thorough cleanliness and care. Panic is a public enemy, and almost a personal crime in the effect it has upon timid minds and on persons afflicted by infirmity or disease.

This and all States may, by proper warning and timely action and enforced temperate living be ready to meet this common enemy when it appears, and preparation for possibilities is alike a public and a private duty. It is possible for science to detect causes and remedies for cholera, and by the aid and blessing of Providence it is also possible for human skill to diminish, if not destroy, this dreaded disease. The

filthiness of Paris, is a warning to the people of the United States, and there are places in my own city probably in your own State, where the waters are a source of pollution, and where the streets, alley-ways, yards and houses abound in filth.

Every citizen in his own State, his own home and place of business, may be a practical sanitarian. In the four cholera visitations at New Orleans, between 1832 and 1855, the deaths numbered 51,300. This warning after a long time proved the necessity of sanitary organizations to meet and fight the disease if it came again. Whatever the causes of this evil, duties are made so plain that they must be enforced.

[To be continued.]

THE HYGIENE OF THE NERVOUS SYSTEM AND MIND—RELATION OF INTEMPERANCE AND DIPSOMANIA TO THE NEUROPATHIC DIATHESIS.

BY EDWARD C. MANN, M.D., BROOKLYN, N. Y.

Supt. Sunnyside Private Hospital for Nervous and Mental Diseases, Inebriety, and the Opium Habit. Member of New York County Medical Society, etc.

By the neuropathic diathesis we mean the fatal tendency to break down early in life in brain and nerve.

Brilliant men and women are to-day stricken down in their prime with preventable brain and nerve destruction because they have kept their blood vessels over full by habitual and too prolonged mental excitation, aided by over stimulation of the heart by alcoholic indulgences, or have resorted to opium in some form either to procure repose or to impart a temporary health. As a result of alcoholic excess in a man or woman, all the immediate descendants

are neuropathically endowed. The children born may develop dipsomania insanity, epilepsy, or a proclivity to crime. They are sure to be mentally neuropathic.

There is peril to society in this increase of the neuropathic diathesis that surely breeds its like and perpetuates hereditary descent of the organically defective and vicious.

Every young father and mother wish to transmit to their children healthy brains and vigorous nervous systems,—development, not degeneracy of nerve power.

Intemperance in the young married couple means diminished power of the nervous system and mind of the offspring, with a possibility of an insane asylum as that child's ultimate destination, owing to the seeds of mental disease being sown by the intemperance of the young parent.

It is not necessary to be a confirmed drunkard to have this happen. A moderate amount of alcohol only, if taken daily, I have known to confuse the finer operations of the brain, especially of women, and cause in the children of so-called moderate drinkers hereditary intemperance, maniacal attacks, and hysteria. I am drawing no fancy sketch but speak of cases that have come under my personal care and observation during the past fifteen years. I have known a moderate amount of alcohol taken daily to so injure the brain and mind of a young married woman, that although she was never drunk in her life she is to-day a pitiable nervous wreck from alcoholic excess, and every one of her children are neuropathically endowed. All this is preventable brain and nerve disease.

This case had exhausted her nervous system and brain in many respects, and was in the habit of daily resorting

to alcohol "to brace her up." The result was the complete undermining of nerve stamina instead of the brain and nerve rest which this individual sought for in alcohol.

In one-half of the cases coming to me that I annually treat, I attribute a cure quite as much to changed home and scenery, where depressing cares are dropped and irritating environments exchanged for agreeable mental surroundings and brain and nerve rest, and the withdrawal of the alcohol, or perhaps opium, or chloral, which the patient has been relying upon delusively, as I do to the active therapeutic treatment.

I have seen the premature decrepitude and nerve degeneracy and neurasthenia in men and women disappear when they get new bone and blood and muscle by the withdrawal of their daily allowance of alcohol, and the substitution of fresh air, exercise, electricity, and nerve tonics to invigorate them.

Adequate rest of the brain and nervous system is a condition of its repair and power, and that rest cannot be obtained if the nerves be kept excited by alcohol. It would seem that when the public realize what the disease of inebriety is and how easily they can avoid it, that it will become and be classed under preventable brain and nerve disease, and to that end we will consider the cause and cure of inebriety as concisely as the magnitude of the the subject will allow us.

Drinking indulged in as a bad habit is very apt to develop itself into a most formidable bodily and mental disease, resulting from alcoholic poisoning.

Introduction in excess continuously from time to time of intoxicating drinks, leads to an accumulation in the system of the specific poison. The tissues of

the body and the nervous system which includes the brain, becomes at length so impregnated, so charged with the poison, as to produce in the unhappy victim of this condition a craving for the accustomed stimulant which becomes absolutely irresistible. Such people as these are dipsomaniacs, and for these victims there can be no doubt that there is but one remedy,—absolute restraint from all access to spirituous or alcoholic drinks for a sufficient length of time, so that they shall gradually recover from the mania.

When persons are inclined to renew the habit, there should be institutions for their reception where they may be placed by their friends or well wishers, by their own personal desire or by the authority of the magistrates for periods of from three to twelve months. Dipsomania consists, as I have said, of an irresistible craving for alcoholic stimulants coming on very frequently, periodically, paroxysmally, and with constant liability to periodical exacerbation. When the craving becomes altogether irresistible, it is in the majority of cases the result of habitual drinking, although I have known it produced by other causes, such as overwork in men and some of the diseases in women.

Habitual drunkenness is a *vice*. Dipsomania is a *disease*.

In a case of habitual drinking, which is at first voluntary, the bad habit may become involuntary and a disease. I have seen many dipsomaniacs who, in the interval between the paroxysms, would not take stimulants, but a drunkard will take stimulants whenever he can get them.

When drinking has been strong in both parents, it is a physical certainty that it will be traced in the children.

Alcohol should be dealt with as a source of both moral and physical de-

generation. The human race is morally, mentally, and socially deteriorated by the poison. As a cause of disease it gives origin, as Richardson has shown, to a great population of afflicted persons, many of whom suffer even death without themselves suspecting from what they suffer, and unsuspected by others. Amongst these diseases are alcoholic dyspepsia, alcoholic insomnia, organic deterioration, special structural deterioration, alcoholic diseases of the heart, alcoholic consumption, organic nervous lesions, loss of memory or speech, dipsomania and mania-a-potu. *There is a small advantage and an infinity of evil to be gained by the constant daily use of alcohol as a beverage.*

The disease of inebriety is almost always accompanied by a change of character in the direction of degradation: a lessening of the sense of duty, of honor, of affection, and of truth. It is not generally believed that the daily use of fermented liquors taken in the quantity which is conventionally deemed moderate, can do harm and produce some of the most painful and dangerous maladies which come under the notice of physicians, but such we think is the fact. Drink is still worse for women than for men, and much worse yet for children, who should never be allowed to touch it under any circumstances, unless given in diphtheria, or some such disease, by a physician. It is easy to sow the seeds of intemperance in a child long before it has any responsibility of its own. It would seem that when public sentiment can be aroused to the fact that the average American has such a tendency to acquire nervous diseases, that if the daily habit of drinking be indulged in that the habit may pass, and will pass with a certain number of persons into the condition of a disease, uncontrollable

by the individual, that a due appreciation of this fact would induce, if not total abstinence, at least an approach to it.

Fully twenty-five per cent. of all the admissions to our insane asylums are due either proximately or remotely to intemperance. Healthy mental functions is dependent upon the proper nutrition, stimulation, and repose of the brain, and upon the processes of waste and reparation being regularly and properly maintained. We know that the brain-cells are nourished by the proper and due supply of nutritive plasma from the blood and that this is essential to healthy function; and indeed the ultimate condition of mind with which we are now acquainted consists in the due nutrition, growth, and renovation of the brain-cells. If now we take into the system an amount of alcohol that causes the blood plasma to convey to the brain-cells a noxious and poisonous, instead of a nutritive, substance, stimulating the cells so as to hasten the process of decay and waste beyond the power of reparation and renovation and impressing a pathological state in them, we must inevitably have resulting a change of healthy function and diseases induced. Owing to the abuse of alcohol, we have resulting, a change in the chemical composition of the cerebral cells from the standard of health, which is the foundation of organic disease, as it prevents and interrupts healthy function. As a result of the over-filling of the cerebral vessels or hyperæmia of the brain from the long-continued use of alcohol, we have at first symptoms of irritation, due to increased excitability of the nerve-filaments and ganglion-cells of the brain. The symptoms of exhaustion and depression occurring at a later stage are due to lost excitability of the nerve-

filaments and ganglion-cells of the brain, owing to a want of the proper supply of arterial oxygenated blood to them. This is caused by the excessive cerebral hyperæmia, the escape of venous blood from the brain being obstructed, the result being that no new arterial blood can enter the capillaries. We may have apoplectiform or epileptiform attacks and paralysis occurring in the course of these cerebral hyperæmias, and they may be due either to obstructed escape of venous blood or to secondary œdema of the brain, in which transudation of serum takes place into the perivascular spaces and interstitial tissue of the brain, with consequent anæmia.

We find thickening and increase of the membranes of the brain—*pia mater* and *arachnoid*—and permanent infiltration of the former and a varicose condition of its vessels as a result of continued abuse of alcohol. As the state of the *pia mater* is unquestionably closely related to the higher functions of the brain, the latter must suffer more or less as the result of such an abnormal condition of the former. The alcoholic patient may get up a chronic meningitis, the prominent symptom being impairment of memory, dullness of intellect bordering on dementia, trembling of the limbs, tottering gait, hesitating slurring speech, and other symptoms indicative of gradually progressing paralysis. Finally, those who indulge in the alcohol habit are indirectly predisposed to the acquisition of nearly all diseases, as they, by long indulgence in alcohol, lessen the power of resisting their cause. There is therefore safety in abstinence.

Subscribe now for "*The Annals*," before you forget.

SANITARY CONVENTION AT BIG RAPIDS, MICHIGAN.

A sanitary convention under the auspices of the State Board of Health, was held Nov. 18 and 19, 1886.

It was opened by an address of welcome by the mayor of the city, E. W. Hudnutt. Dr. John Avery of Greenville, Mich., President of the State Board of Health, spoke in response to the address of welcome, and said that the object of the Convention was not to benefit physicians, but the public. The members of the State Board of Health also wished to gain information, that they may better serve the people. Rev. Henry Johnson, President of the Convention, read an able address.

Dr. John P. Stoddard of Muskegon, read a paper on "Injuries of Every-day Drug-taking." He said the habit of taking drugs and nostrums was beyond comprehension. It partly came from mothers dosing their babies with soothing syrup, hive syrup, paregoric, worm-lozenges, etc. Druggists and proprietary medicine companies distributed flaming bills, chromos and free samples of nostrums from house to house. The prevention was to educate the people in the injurious effects of drugs. There should be less medicine taken, and only on the advice of a physician after a careful diagnosis. A doctor was not capable of prescribing for himself when ill, much less the laity, who know nothing of the action of drugs.

Dr. David Inglis, of Detroit, read a paper entitled "Alcohol: What Effect has it as Food, Medicine, or Poison?" In closing his remarks on alcohol as a medicine, he said: I should like to produce the continually accumulating evidence of the positive harm caused by such indiscriminate use of all kinds of alcoholic drinks, bitters, and tonics. I

should like, even more carefully, to define the conditions in which alcohol ought to be used than I have here done. I have only time to urge that we ought, in all cases, to let alcoholic liquors be the last, and not the first, remedy; that we ought to give alcohol in definite and known doses, and only during such time as the drug is required, and to make it our business to see that its use is then suspended, just as we do in case of opium.

Dr. J. L. Burkart, of Big Rapids, read a paper on "Water-supply of Big Rapids." The paper embodied the report of the committee appointed by the common council to investigate the matter of procuring a better article of water for that city, and contained much of special interest to the citizens of Big Rapids.

This was followed by a paper on "The Sanitary Needs of Big Rapids," by Dr. L. S. Griswold, which contained practical suggestions for the citizens of that city.

Prof. W. N. Ferris, of the Big Rapids Industrial school, read a paper on "Hygiene of Schools." He said he could not recall ever having visited a room regularly occupied by 40 or 50 pupils, that could be said to be properly ventilated. Dullness, nervousness, headache, colds, catarrh, and consumption are among the frequent effects of staying in such rooms. Under the influence of bad air, study is irksome, good behavior difficult, and the playground a heaven. He dwelt upon the lack of ventilation in the Big Rapids schools, and said that the foul-air openings could be made several times larger with slight expense. Strange as it may seem, school patrons think very little about ventilation, and care less. Their sleeping and sitting rooms are without any intentional means of ventilation.

Vitiated air is the most expensive commodity which man takes into his body; for in thousands of families the expenditure of money for a single year which sickness and loss of time occasion by inhaling poison, would defray the necessary expenses for properly ventilating a decently constructed house. In several of the school-rooms of this city, the air space of each pupil does not exceed 200 cubic feet. We should construct rooms for lower grades very large, and use single desks. The speaker denounced the style of desks in use in one school-room in Big Rapids as "torture appliances."

Col. J. O. Hudnutt, C.E., of Big Rapids, read a paper on "A System of Sewerage and Drainage for Big Rapids."

Judge M. Brown, of Big Rapids, read a paper on "Public Health Laws." After referring to the health regulations of the ancients, he said: As civilization has advanced and the average of mankind has reached a higher condition upon the plane of intelligence, health laws have become more general and better enforced. It may be stated as a fact that the race of man has advanced mentally and physically in proportion as heed has been given to the laws for the promotion of health. A kind of intuition seems to pervade the human race, aside from and above all law, that it is necessary to care for the public health in order to be comfortable and happy, and to enjoy this life. This intuition has probably led to enactment of health laws, by persons and bodies having legislative authority. * * * * Some offenses against the public health are punishable by the common law—by fine and imprisonment—such as the selling of unwholesome provisions. When articles of food are sold for domestic purposes, the law implies a warranty that they are fit for such

purposes. The Supreme Court of this State says that this rule is not only reasonable, but essential to public safety. He then discussed English sanitary work. He thought the laws of Michigan in regard to public health were good enough, but the way they are usually enforced is very bad. "Perhaps one of the greatest sources of sickness in our midst is the want of proper ventilation in buildings occupied as dwellings, public halls and other public places where large assemblages of people convene. In this county, until a very recent date, at every term of the circuit court more or less persons in attendance became sick. Court was held in a room entirely unfit for occupancy on account of not being properly ventilated. * * * * * I desire to call attention to the subject of prisons and jails in this part of the State. I don't know a jail within the ninth congressional district that is properly ventilated, and hardly one that is proper for a human being to remain in over night. This subject has been agitated and investigated by the State Board of Health and the State Board of Correction and Charities, and a great deal of valuable work has been done; but there is still very much to do."

Dr. Arthur Hazlewood, of Grand Rapids, a member of the State Board of Health, addressed the Convention on the subject of "What to eat, When and How," and Dr. R. J. Kirkland, also of Grand Rapids, read a paper on "Care of the Eyes," both of which were interesting, but of which we have not been able to secure abstracts.

"Surface Filth as a Medium of Disease" was the subject of a paper by Rev. Henry A. Wales of Big Rapids. He said: "In 1876, Dr. Henry Bowditch, of Boston, made an estimate of the annual cost to the people of the

United States, because of unnecessary sickness, and placed the figures at \$100,000,000. Later one of our own physicians—who is with us to-day—revised these estimates, going more into detail, and he increased the amount to \$300,000,000; a loss each year of over \$10,000,000 to the people of Michigan. And this estimate leaves out of view the physical suffering, the mental pain and anguish, and the death of loved ones around our social circles." In regard to filth he said: By surface filth, we mean anything of this disgusting nature that is thrown upon or is suffered to lie upon the surface of the ground around our habitations or places of business—garbage, or the refuse of vegetable and animal matter; dirty water of every description, from that in which food is cleansed to the dish-water and slops of a household; dirt swept from the floors of the home or shop; the contents of the wood-box and spittoons; the refuse of a wood-yard, hen-house or pig-pen; and the excrement from chambers and privies. Besides these, there are sources of filth in musty rooms, woolen blankets, feather beds, and the cellars under the house. Rubbish of any kind always becomes filthy if allowed to stand; and dampness increases filth by causing fermentation and vegetable growth. * * * A close inspection of all the premises of a habitation is continuously needed, that nothing which may cause filth shall be allowed to accumulate." Mr. Wales thought that the "grand march of the giant contagion begins in the surface filth and the vaults of the civilized privy;" and he thought that if the dry earth system were universally introduced, it would exterminate such diseases as cholera, dysentery, and typhoid fever, as they are propagated solely by germs in the voided excrement.

Prof. W. S. Baker, Superintendent of Big Rapids Public Schools, discussed the paper by Prof. W. N. Ferres, on "School Hygiene," in which he dwelt largely on ventilation.

Prof. Henry F. Lyster, M.D., of Detroit, a member of the Michigan State Board of Health, read a paper for which no subject was announced. He said: "Nature cares absolutely nothing for individuals. It is the family, the species, the race that she cares for. When one of her laws has been contravened, it may not always be capital punishment, but it will always be punishment proportionate to the offense. She is implacable as long as the law is offended. She asks no reasons; she demands no explanations. She simply requires obedience. The more we study and understand her laws, the more clearly appears a Divine will governing them. An offense against the moral law of our nature brings its punishment in the deterioration of our moral nature just so long as it continues. * * * * If you should go through the wards of St. Mary's or Harper's hospitals, you would see lying upon one of the beds a poor, wan consumptive, with a dash of too much brilliancy in his eyes, too long eye-lashes, too delicately a chiseled nose, too bright a crimson spot upon the cheeks, too hot and pungent a feeling to the long, thin hands. It may be from no fault or error of his own that he lies there. He is bearing the punishment to which nature, in her own unerring judgment has set her seal. In this ward you might see a young man old before his time, whose uncertain, shuffling gait and feeble form have placed him physically, among the octogenarians, and whose waning intellectual power and dull, sluggish brain fail to respond to any emotion of either joy or sorrow. Here

is the victim of dissipation and intemperance. Nature is punishing him. The laws which he infringed years ago are unsatisfied. He has wrecked his own life, and who knows what other lives? He passed his Rubicon in early manhood. He will make his final ferryage before he should have reached the youth of his strength. There is a beautiful little girl. Some deformity of the spine has been her lot. * * * * She is suffering for the sins of her forefathers. Thus we see, on all sides, the victims of the infringement of natural laws. * * * * While the genus and species will be preserved 'in nature, what can be done to save the individual and enable him to attain his highest degree of perfection, physically, and mentally? It is here that a distinct science is applied, known as sanitary science. The discoveries in this science are nothing more than translation and application of natural laws to the preservation of health and the prolongation of life. * * * * A young man is in no way responsible for his inheritances, but sanitary science can teach him much that will profit him, and can do much to protect him. Suppose that his father had died at thirty of consumption, and that his mother at forty was in feeble health, very nervous and a victim of various neuralgias, and came from a comparatively short lived family. Sanitary science would say to this young man, choose your occupation from among those which will enable you to be in the open air a large portion of the time; where exercise would insure good sleep at night: where good digestion waits on appetite, and health on both. He should prefer the saddle to the office desk, the broad fields of the farm and the smell of new mown hay to the narrow streets and the lowering cloud of smoke and dust that hangs over the

crowded city. He should turn his back upon the tempting offer of a clerkship in an insurance office, or store, and herd sheep in New Mexico, cattle in Montana, or manufacture pine lumber in Northern Michigan, or farm it in Washenaw or Oakland county. Let him do anything under the sun rather than inure himself in the shadow of indoor life. Sanitary science comes to the aid of this young man in all of his environments. * * * * The maintenance of parks and boulevards, public libraries, open-air concerts, and elevating press and free schools, are all powerful sanitary agents."

Dr. Jno. Avery, of Greenville, President of the State Board of Health, read a paper on the subject of "Pasteur and Protective Medicine." Dr. Avery told of Pasteur's parentage, his boyhood, his studies, and his first triumph as a chemist in discovering the left handed polarizing tartaric acid. Pasteur, after this work, was made assistant professor of chemistry at Strasburg, where his first work was to prove the power of minute organisms to change or modify chemical affinity. He was then made dean of the faculty of science of Lille. Here he determined to devote a portion of his lectures to the study of fermentation. The prevailing theory of fermentation at this time, Pasteur could not accept. He experimented with milk, and discovered the lactic ferment. And soon after, in the same substance or some of its products, he found the butyric ferment. These two organisms he found to be entirely distinct. The lactic ferment required for its existence and multiplication, free oxygen or air; while the butyric ferment died when exposed to the atmosphere. Pasteur soon demonstrated that the special fermentation known as putrefaction is caused by a living organism belonging

to the same class as the butyric ferment, and he also soon discovered the acetic acid ferment—the "*mycoderma aceti*." Pasteur's next work was to demonstrate that spontaneous generation was a myth; and he then discovered the germ which caused so much havoc among the silk worms of France and other countries. He demonstrated that the disease among the silk worms was contagious, and gave practical directions for its prevention which restored the silk industry to Europe. This work led him to the great work of his life,—the development of the theory of the parasitic origin of communicable diseases; and in this effort he took up the disease known as anthrax or splenic fever which was decimating the flocks of all Europe. "He put a drop of splenic fever blood into sterilized yeast water; in a few hours it swarmed with myriads of bacteria. A drop of the first cultivation he put into a second flask containing the same kind of liquid, and the bacteria multiplied as before. This process he repeated 15 or 20 times, and by this means freed the initial drop of blood from any substance it might have carried with it. And now, if a drop of this last cultivation is injected under the skin of a rabbit or a sheep, the animal dies with all the symptoms of idiopathic splenic fever. "Pasteur had studied vaccination, and he now undertook to vaccinate for protection of animals against splenic fever. "Before the close of the year 1881, Pasteur had vaccinated 33,946 animals. In 1882, the number amounted to 399,102, including 47,000 oxen and 2,000 horses. In 1883, 100,000 were added to the list. In 1881, it was the common practice of farmers to vaccinate one-half of their herds and leave the other half unprotected. It was found at the close of

the year, that the loss in the protected sheep was ten times less than in the unprotected, being one in 740 as against 1 in 78. In cows and oxen it was 14 times less. * * * * "In pursuing his investigations of the splenic fever disease, Pasteur made some curious and interesting discoveries which are of practical value to sanitarians, and all who are interested in preventing the spread of communicable disease. * * * *

He found that an attenuated virus that could cause no harm to a guinea pig of a year or a month or even a week old, would kill one just born. The weakened microbe could multiply itself in the blood of one so young; and a few drops of this pig's blood would kill one still older, and so on until the full virulence of the microbe was restored. * * * * Exposed to the air, these germs become weakened or take on the form of spores, in which condition they will remain viable for years, and float in the air as minute particles of dust, until they find lodgment in the proper media for their development and multiplication. What is true of these germs, may also be true of the germs of diphtheria, scarlet fever, small-pox, typhoid fever, and other communicable diseases. In localities where these diseases have prevailed as epidemics, is it not quite possible their attenuated and viable germs are constantly floating in the air, ready to resume their active form whenever and wherever the conditions of climate, of poverty, of wretchedness, of filth, and of bad air, present themselves?" Dr. Avery closed his paper with a discussion of Pasteur's work in inoculating for hydrophobia.

The last paper of the Convention was on "Prevention of Communicable Diseases," by Dr. F. Gundrum of Ionia, of which no abstract has been obtained.

Sets of the pamphlets issued by the State Board of Health, giving detailed methods for the restriction and prevention of each of the dangerous communicable diseases, were distributed in the audience.

The convention was a successful one, and will undoubtedly result in good to that community

HEALTH ALPHABET.

The following was printed on the back of the *Menu* of the Sanitary dinner given in Philadelphia last Spring.

As soon as you are up shake blanket and sheet;
Better be without shoes than sit with wet feet;
Children, if healthy, are active, not still,
Damp beds and damp clothes will both make
you ill;

Eat slowly and chew your food well;
Freshen the air in the house where you dwell;
Garments should never be made too tight;
Homes should be healthy, airy and light;
If you wish to be well, as you do, I've no
doubt,

Just open the windows before you go out;
Keep the rooms always tidy and clean;
Let dust on the furniture never be seen;
Much illness is caused by the want of pure air,
Now to open the windows be ever your care;
Old rags and old rubbish should never be kept;
People should see that their floors are well
swept;

Quick movements in children are healthy and
right,
Remember, the young cannot thrive without
light;

See that the cistern is clean to the brim;
Take care that your dress is all tidy and clean;
Use your nose to find if there be a bad drain;
Very sad are the fevers that come in its train;
Walk as much as you can without feeling
fatigue,

Xerxes could walk full many a league;
Your health is your wealth, which your wis-
dom must keep;
Zeal will help a good cause, and the good you
will reap.

HYGIENIC MEDICINE.

DR. RICHARDSON thus writes in the *Popular Science Monthly*: "The progress of hygienic medicine in the last fifty years is the medical fact of the present age and the fact that will stand out in boldest relief when the history of the period shall be written by some future Æsculapian scholar. But rapid and effective as this progress has been the principles of hygiene are yet in their infancy. We have learned to appreciate the true value of hygienic principles in the prevention of diseases of the epidemic type; and the medical profession, throwing aside all selfish recollections, has been the first to teach the practice of these principles and to prove their force and vitality. The next step in the way of advancement is to demonstrate that the same principles are as useful and as necessary in the treatment of actual disease as they are in prevention.

A great advantage in the hygienic treatment of disease is that it does not, or at least need not, interfere with sound and experience-proved modes of treatment of a medicinal kind. The scientific physician finds, in fact, that there is always a consistent plan for combining the medicinal and hygienic systems. He sees that the two systems are one; he sees, further, that the mere medicinal plan without the hygienic is in all cases worse than imperfect. The practical details of hygienic medicine in relation to the treatment of disease have, however, yet to be wrought out more fully. This will be sure work, but slow. Necessarily slow, because it is hard to give up old friendships in dogmatism, while to effect a cure in a sick man by fresh air alone, or diet, is infinitely less satisfactory to the public than to assume to effect the same cure even by a bread-pill."

INQUESTS AND HEALTH STATISTICS IN PHILADELPHIA FOR 1886.

During the year Coroner Powers and his deputy Mr. Ashbridge, held 1861 inquests. Of this number 235 of the deaths were due to ordinary accidents, 140 to railroad accidents, 100 to suicide, 196 to drowning, 47 violences, 18 found dead, 8 sunstroke, 3 freezing, 1 lightning, and 1212 natural causes.

The Health Officer's statistics shows that there were 19,943 deaths, a decrease of 1059 compared with the previous year. The figures are: Males, 10,110; females, 9833; boys, 4634; girls, 4325; adults, 10,984. Nativity—United States, 14,626; foreign, 4525; unknown, 792; colored 1048. There were 4830 under 1 year old, eight over 100 years, 137 over 90, 753 over 80 and 1445 over 70. The mortality by wards was:

Ward.	Ward.	Ward.
1.....1075	12.....298	23.....516
2.....685	13.....356	24.....982
3.....387	14.....419	25.....999
4.....572	15.....823	26.....920
5.....453	16.....405	27.....1182
6.....205	17.....524	28.....717
7.....827	18.....700	29.....963
8.....499	19.....1161	30.....581
9.....219	20.....881	31.....727
10.....419	21.....	
11.....431	22.....	19,943

The principal causes of death were: Alcoholism, 75; apoplexy, 367; Bright's disease, 436; cancer, 456; casualties, 317; cholera infantum, 668; congestion of the lungs, 220; consumption of the lungs, 2822; convulsions, 850; croup, 644; debility, 507; diphtheria, 417; disease of the heart, 640; scarlet fever, 248; typhoid fever, 702; whooping cough, 85; inflammation of the lungs, 1702; inflammation of the stomach and bowels, 628; inanition, 575; marasmus, 862; old age, 758; and paralysis, 437. But one death due to smallpox was reported during the entire year.

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Editorial.

TO OUR SUBSCRIBERS.

It is pretty generally known that hygiene is not a popular science; that is, to say, it is not cultivated by the masses. While the preservation of health should be the first thought of everyone, in reality it is not, and it is only here and there that an intelligent person is found who appreciates the benefits to be derived from the cultivation of this science. This fact makes it up-hill work to establish a journal of hygiene. We have no reason to complain of our subscription list; it is growing nicely, but it is costing us a great deal of money to find out those who are willing to support such a journal. Therefore we are going to ask each subscriber to send us one new subscriber. We will offer to each subscriber who will send us a new name, with three dollars (which will pay for the year 1887 and for the six back numbers from last July), to send a case in which to preserve the journals (in which the volume can be finally bound

if desired), and we will also send a case to the new subscriber. We hope and trust that those who have been kind enough to help us along with their own subscriptions will realize the great assistance they can render to our good work by helping us in this way.

AGAIN TO OUR SUBSCRIBERS.

WE desire to be of service to those who have helped us, and we therefore offer our services to make any purchases that any of our subscribers may desire. Several persons living away from large cities have written asking us to buy certain articles for them, and this has suggested to us that by making this offer we might serve our friends. Of course, when we buy goods to sell again we can secure a discount, varying on different goods. We would allow our patrons to benefit by this discount; we would say that we will be able to furnish it for ten per cent. less than the price you would have to pay for it if you bought it yourself. You can thus save both trouble and money.

OUR ILLUSTRATIONS.

"In one ear and out of the other" is a very old but a very true saying. But when we appeal to the mind through the eye, it is a very different matter. That which is photographed upon the retina is much more lasting than that which is impressed upon the tympanum. Realizing this fact, we have decided to call illustrations to our aid to enable us to make clear the lessons of hygiene that we preach. In each number we will have different illustrations, and we trust that this important step will be appreciated by those whom we desire to become subscribers.

Notes and Comments.

WORRY vs. HEALTH.

The *British Medical Journal* says that one of the unerring signs of failing or debilitated health is the inability to withstand the pressure of daily cares. It is one of the many infirmities of advanced years, when the stamina of the individual has been sapped by retrogressive changes in which the nervous system participates, that cares which sat lightly on the shoulders when young, then become a well-nigh unportable burden. The enfeebled powers of resistance, unable to throw off the incubus of worry with the elasticity of an early period of life, not unfrequently render the person a prey to melancholy thoughts which may embitter his declining years. This is, of course, but one factor in the altered character of the aged, and is partly a cause and partly an effect of the changed physical circumstances of his existence. So far, it is, in civilized nations, a natural and most inevitable infliction. When, however, this same proneness to discouragement shows itself in individuals not past their prime, and not overwhelmed with special preoccupations of a harassing nature, it is assuredly a sign of being "below par;" and the proper treatment is, undoubtedly, not to stifle the feeling by injudicious blending of the effects of alcohol, tobacco, and excitement, but to afford an opportunity for the recuperative powers of the system to assert themselves, and so restore the mental tone which is wanting. In the excellent little work on Digestion, recently published by Sir William Roberts, he suggests, with great

plausibility, that, although the effect of habitual alcoholic indulgence is, beyond question, injurious to the average constitution, yet it may, under circumstances of intense and passing worry, save the individual whose mental equilibrium is menaced from positive mental aberration, by rendering him simply insusceptible to the violent emotions which unhinge and deprave the intellect. The idea is, doubtless, correct in a limited number of cases, but, from its nature, it is very undesirable that it should be generally accepted. People are very partial to self-medication as it is, and rush to alcohol as a panacea for the ills to which flesh is heir. Hence, nothing should be advanced which can in any way be construed as authorizing recourse to such a dangerous method of treatment. When even an attack of dyspepsia, from over-indulgence in cucumber or anything else, is known to plague the unhappy patient in the throes of apprehension as to his condition and prospects, it can be no matter for surprise if nervous exhaustion, from over or misdirected application, or liver derangement from gastronomic excesses, give rise to feelings of what George Sand has described as "profound melancholy with a wish to die." In the majority of cases, fortunately, this "wish to die" does not survive the visceral derangement which gave it birth; but if the condition be allowed to assume a chronic form, the physical depression is also likely to become more or less permanent, and may then exercise a markedly prejudicial effect on the health and happiness of the subject. It should not be forgotten that work, pure and simple, however hard and however constant, is rarely the cause of impairment of health, if only common hygienic precautions be

observed. It is the hurried and irregular meals, and still more irregular "pick-me-ups," which do the mischief. Monotony of work is, however, in the long run, as detrimental to intellectual vigor as is a monotonous diet to the digestive functions; but relief here is easily obtained by forcible diversion of energy, during some part of the twenty-four hours, into another channel. The statesman, exhausted by the responsibilities and cares of office, may seek recreation in the felling of timber, while the wood-cutter, if he be wise, will take his over a book or a paper by the fireside. The complete change of occupation and mental activity on Sundays, must be of immense utility to the jaded bank-clerk or business tradesmen, and if for no other reason, is highly to be recommended.

SANITARY SCIENCE IN PARIS.

F. B. Holman sends to *The British Medical Journal* the following account of his experience of domestic sanitation at Paris, which he says is by no means an extraordinary one:

"On October 15, 1883, he took, on a three years' lease, an entresol in a house in one of the avenues leading up to the Arc de Triomphe. Judging by appearances, the house was one of the best in the avenue. A few days after taking possession he paid a visit to the cellars, and found that the passage was literally flooded with a foul-smelling liquid, which was oozing from the tinette and down the outer wall of the places in which it stood. A tinette is a metal tub—a sort of movable cess-pool on a small scale, which receives all the dirty water from the kitchens and the excreta from the water-closets. It is so contrived that it retains the

solids and allows the liquids to flow into the sewers. A tinette ought to be changed at least once a week, but for the sake of economy landlords often omit to take this precaution, and leave their tinettes untouched until they think them about full. The consequence of this is, that the strainer is choked up and the sewage escapes from the tinette, or is retained in the pipes and escapes through the cracks and joints into the adjacent walls, or escapes from both tinette and pipes, according to the defects in the apparatus.

"A few days afterwards, Dr. Holman felt very chilly, and, in the course of a short time, had a severe attack of typhoid fever. He complained ineffectually, first to the concierge, and afterwards to the landlady's son—a medical student. Later on, the concierge admitted that his wife had been laid up with 'le fièvre muqueuse' three months after coming to the house. On February 11, 1884, another flooding took place. Dr. Holman immediately wrote to the sanitary authorities. His letter, countersigned by two witnesses, was posted on the 13th. An engineer, belonging to the Salubrité, called on the 27th. The subsoil being sand, the sewage had by this time soaked in; but the wall was still damp and most odoriferous. An engineer came from the Commission des Logements Insalubres on March 5, and another engineer from the Salubrité a few days later.

The result of their several investigations was that, on May 21, a letter was received from the Prefecture of the Seine, stating that 'the drains are in perfect order; it will suffice to raise the shafts of two of the ventilators to make the house perfectly healthy.' Before he received this letter

Dr. Holman had placed the matter in the hands of a solicitor, and requested him to take proceedings to set aside the lease.

"A third overflow took place on March 14. In December a further effort was made to get the *Salubrité* to force the landlady to disinfect and clean the underground part of the house. Professor Brouardel kindly helped, also Dr. Du Meslin, President of the *Commission des Logements Insalubres*; but all their efforts ended in merely bringing another engineer on the scene—a head man, however, this time.

This engineer avowed that he was unable to understand why the sewage came through the wall, and declared that the subsoil did not smell of ammonia, which, to him, was a positive proof that it did not contain anything noxious.

On May 3, 1885, Dr. Holman left the house, for the safety of himself and family; and, in order to be allowed to remove his furniture, had to deposit in the hands of a third party the whole of the rent for the then residue of the lease, namely \$1400. As to this law-suit, the case was put upon the roll in May, 1884, and was pleaded on January 21, 1886. The Court accepted the evidence of the sanitary engineers and that of the two architects paid by the landlady, and was so completely satisfied with this testimony that it refused to submit any questions to Professor Brouardel as medical expert. Judgment was delivered on January 28, when the Court declared that the house had been properly constructed and that the drainage was perfect, and it dismissed the case, with costs. The sanitary question—the really important question—was not even mentioned."

SANITARY FURNITURE.

THOUGH so much has been written concerning domestic hygiene, no general principle has yet been promulgated to govern the construction of furniture. Dr. Gustav Jaeger, however, seeks to supply this want. Admitting the soundness of the theory on which he founds his sanitary clothing reform, Dr. Jaeger further urges that dead wood, as well as cotton, linen, and other vegetable matter, retains its powers of absorbing noxious animal exhalations. These the living plant digests, but the dead fibre or wood only harbors such poisonous gases for a time, and then throws them off again when there is a change of temperature. For instance, if a room is closed for some days, an unpleasant odor will be noticed on re-entering. This is especially apparent in German government offices, where the innumerable shelves and pigeon-holes are made of plain unvarnished wood. Sanitary furniture must therefore be rendered non-absorbent by carefully polishing or painting all the woodwork, both inside and outside; and the same rule applies to the flooring, wainscoting, etc., of all habitations. A room may be cleaned and purified after infectious diseases; but very powerful fumes are required to reach the interior of a closed drawer. From a sanitary point of view, the inside, the unseen, the back parts of furniture equally require to be treated with varnish, paint, or other substance, to render the wood non-porous. In practical Germany, sanitary furniture has become an article of commerce, and so it should in this pre-eminently practical country. To carry out the above principles, the wood employed was prepared beforehand and rendered non-porous. This process, when applied to furniture made exclusively of wood,

such as wardrobes, chests of drawers, sideboards, etc., involves an extra cost of not more than 5 per cent. Old furniture may also be rendered sanitary for a small outlay, by covering the interior and unseen parts with a substance that will close the pores. The "unpleasant feeling" sometimes noticed by those who use upholstered furniture is due to the odorous exhalations stored in the vegetable fibre, and which vitiates the atmosphere of ill-ventilated rooms. The polished wooden seats of our ancestors are preferable, unless the chairs and couches are stuffed and covered with materials of pure animal fibre, dyed with fast wholesome dyes; and this, it is calculated, would necessitate an extra cost of about 10 per cent. All textile material not of animal fibre, such as the stout webbing required underneath upholstered seats, is soaked in a solution which forms an impervious coating and prevents absorption. Carpets and curtains made or adulterated with vegetable fibre are obviously incompatible with this definition of sanitary furniture. White window-curtains, we are assured, will, if examined closely, emit a sour odor when they have been in use for a little time. A woollen curtain would give rise to no such unpleasantness, even when exposed in an inhabited room for a much longer period. Thus, to sum up, Dr. Jaeger maintains that all woodwork should be rendered non-porous, the walls should be painted or the paper varnished, and the upholstery, bedding, carpets, rugs, and curtains should consist of animal fibre sanitarily dyed.

HYGIENE OF THE WORKING CLASSES.

In the course of an article on this subject read before the Ohio State Sanitary Society, Dr. W. J. Scott, of Cleve-

land, very truly says that, in proportion to one accident, ten have their lives shortened through lack of ventilation. A great share of all this could be prevented by the application of proper knowledge and proper means. He goes on to say:

"Then these classes are themselves to blame for conditions in which they are found. To my knowledge, in every city there are great numbers of both men and women bringing on ill-health by exposure to bad influence and vicious modes of living, for which neither work, nor the place of work is at all responsible. Although of naturally sound constitution, and possessed of sufficient knowledge and ability to turn away from bad associations and pursue a healthful mode of life, they seem to forget all restraints and abandon all regular habits, and in thoughtless improvidence bring down upon themselves the larger portion of the ills they suffer.

"There is another large class of grand healthy people from rural districts who crowd into cities, and go to work in shops, iron mills, etc. They live with their friends, or in dirty boarding houses, and sleep in small crowded apartments, shut up closely. In the course of a year or so their general health fails. They then begin to cough, saying that they have taken cold, and in a few months more die of consumption. A prominent fault, as I have many a time remarked, is the personal care of themselves and their clothing. The clothing saturated with sweat is hung in a close closet to dry. The animal compounds degenerate, producing a peculiar odor which will permeate every crevice of the apartment, and fill the atmosphere which they breathe. The bed and clothing become saturated with the stench.

This odor is characteristic and persistent, and can be distinguished on person or clothing, which otherwise may be clean. Years ago I was accustomed to meet the same class of persons who worked on the Ohio canal and on large farms in Central and Northern Ohio, where they lived in log houses or board shanties. Among them very few suffered with the same class of diseases, because they had a free supply of air. I believe that by removing these sources of personal contamination and vitiation of blood, that the general health of this class would be greatly improved and mortality much diminished. If in mills and large manufacturing shops good bathing appliances were provided, and the operatives advised or required to bathe daily, the general health would be improved and infectious skin diseases be prevented, to say nothing of many other advantages which grow out of such observances. The character of a company in the army is well judged by its appearance as to cleanliness. The same observation may be made under all circumstances and stations of life. For all these reasons I believe that in all towns and cities a public bath well equipped should be looked upon as a public necessity, and would be a profitable investment. In ancient cities this necessity was strongly felt. In Rome and Athens ample provisions were made for such purposes, as is shown by magnificent aqueducts, bringing large supplies of water to their ample bathing houses publicly provided for the people. In Pompeii the arrangement of elaborate baths may be seen to-day, in which the solid marble is well worn by long and continuous use.

"Is it not probable that the nation's welfare required the construction of these places for common use? As degeneracy and slothfulness came over

these people, and they neglected and departed from their pure habits, character was lost, power and influence fell from them, and to-day the Italians and Greeks are looked upon as a set of 'greasers.' Races which to-day are growing into the condition in which the ancients found themselves may study with advantage the arrangements then found necessary to meet it, and recognizing that their subsequent downfall was due largely to neglect of the laws of health, maintain the physical and moral stamina of our people by teaching temperance, frugality, honesty and cleanliness.

"If working people can be convinced that their health and comfort would be promoted by a bi-weekly warm bath, and the conveniences be provided, I am sure they would take the privilege. If mothers could be induced to bathe their children and keep their clothes clean, I am sure that their health would be better, as well as their moral character improved. There stands in the way for large numbers in dense populations, the inability to provide the means and ways for such hygienic improvements. Then the local corporations should make such improvements, and thus lessen the spread of infection and contagion which may not only affect the unwashed but the most cleanly. An affection started in a bad locality may soon reach beyond its boundaries and affect those not in any way accountable for its origin or propagation, so that public provisions for hygienic purposes become a public necessity.

POISONED BEEF, CHEESE AND ICE CREAM.

Dr. R. Harvey Reed contributes an interesting paper on this subject to the *Journal of the American Medical Association*, (Nov. 27), in which after demon-

strating that beef, cheese and ice-cream when in certain conditions are productive of disease says that we must apply the remedy, which is plain to every one. Measures must be taken, either legal or otherwise, to have our meats better cured; such a degree of care being compelled to be taken as will insure the perfect preservation of our meats without the least degree of putrefaction. All meats that are tainted by laying around in the boxes and on the counters of our shops should be condemned, and not allowed to be used at all where there is any possibility of sufficient taint as to favor the formation of these poisonous ptomaines.

There should be a rigid inspection of our cheese factories, and such legal restrictions thrown around them as will not permit the over-fermenting of the cure, or imperfect pressing and curing of the cheese, or of the slightest decomposition of the milk before it reaches the factory, and no cheese should be used for food that shows a decidedly acid reaction with the litmus test, (acids will turn blue litmus red) when slightly moistened. No milk should be used for making ice cream that shows an acid reaction with litmus paper, not that all sour milk contains tyrotoxon, (a poison developed in milk) but that tyrotoxon has always been found in fermented or sour milk. It must be remembered that the "curdling" of the milk or cheese, by the aid of rennet (or calf's stomach), is not a process of fermentation, but a process of digestion, produced by the peptones of the calf's stomach, which at a certain temperature, have the peculiar property of coagulating milk; but that after this digesting process has been arrested, and the coagulate has been allowed to stand for a certain length of time, at a favorable temperature, fer-

mentation is easily induced, and it is at this stage, and under these circumstances, these chemical changes take place, and a harmless article of diet is transformed into a violent poison.

DEATH FROM SEWER-AIR.

AN inquest was held at Liverpool, on the 8th of last month, on the body of a youth who had been employed as apprentice to a plumber. The deceased had, in the previous week, been engaged in repairing some pipes connected with other pipes which led into a sewer. A good deal of gas came through the pipes, and the deceased complained of pain and sickness. He went home, feeling ill, and died in forty hours. The medical evidence was to the effect that death was due to the inhalation of sewer-air, and the jury rendered a verdict in accordance with this testimony.

SLEEPING IN THE WOODS.

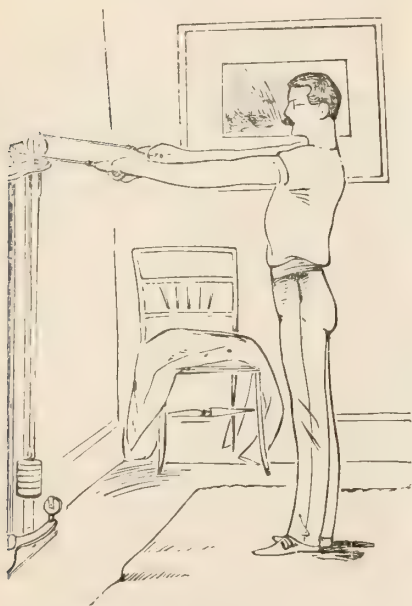
IN one of the German health-resorts, the *Allgemeine medicinische Central Zeitung* states, the experiment was tried last summer of having the patients with pulmonary disorders sleep all night in the open air in the pine woods. The hammocks, used to rest in during the day, were provided with pillows and bed-clothing, and a party of five, two ladies and three gentlemen, spent their nights in the woods with no roof over their heads. The experiment was very successful, the patients slept better than they had been able to do in their rooms, and all declared themselves as feeling much more refreshed by their sleep than usual. It is proposed next summer to provide accommodation for a larger number of patients in the forest, so that the experiment may be tried on a large scale.

PHYSICAL CULTURE.

In our last issue we offered some remarks on "Physical Culture," which when wisely secured, is to be commended from a hygienic stand-point. Our attention has been lately called to a most admirable means of securing equal development of all the muscles of the body, which is known as "THE CHEST OR PULLEY WEIGHT" and which can be put up in any room, as it occupies but little space. The following cuts will demonstrate the various forms of exercise to be derived from this machine and show how all parts of the body may be exercised.

GENERAL INSTRUCTIONS.

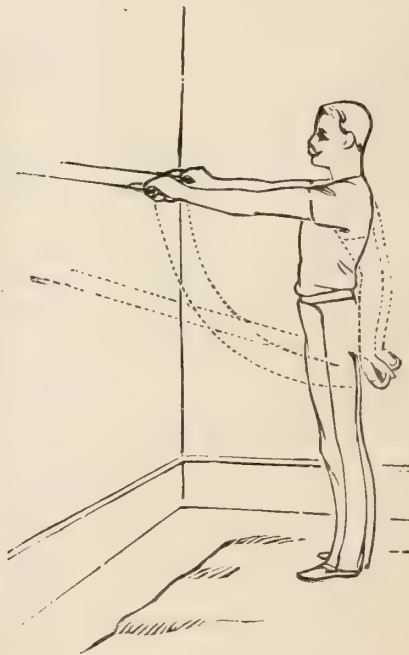
Study each movement carefully. At first learn—Nos. 1, 2 and 3. The



No. 1.
POSITION.

next time execute what you have thus

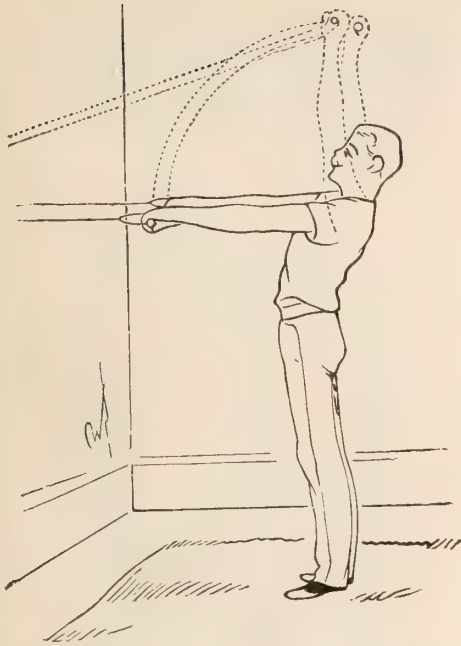
learned, and then study No. 4, continuing thus until all are understood. Make the movements firmly, grasping the handles tightly in the hands and moving the arms and body as if you were going to lift a much greater weight. *Use light weights.* Make the movement firmly and not too fast; about forty per minute is good time. Use *very* light weights first—say 2 to 4 pounds on a double or compound rope chest weight, and 1 to 2 pounds on a single rope machine. Increase slightly as you grow stronger. Make each movement ten times or more. Never use enough weight or exercise long enough to become fatigued.



No. 2. Position—face to the weights. Arms straight and rigid, palms down; motion down to side and return.

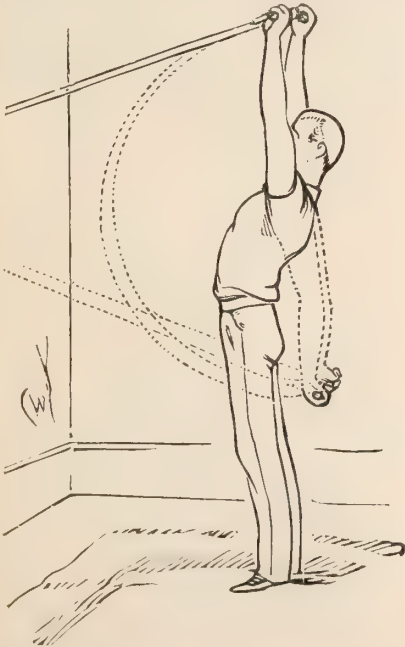
This movement exercises back, arm, and upper chest.

THE ANNALS OF HYGIENE.

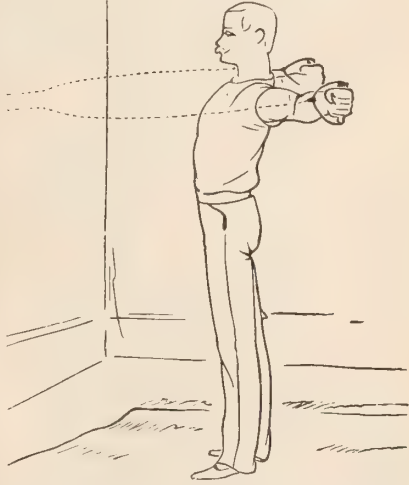


No. 3. Position—face to the weights, arms straight, palms downward, head and body erect. Motion—straight arm up and return, both together.

This movement exercises the shoulder, back, fore-arm, arm and wrist.



No. 4. Position—face to the weights, arms straight up, palms inward, body erect, chest out. Motion—straight arm down and back. This movement exercises the back, arm, loin, lower chest and shoulders; also the wrist, same as No. 3.

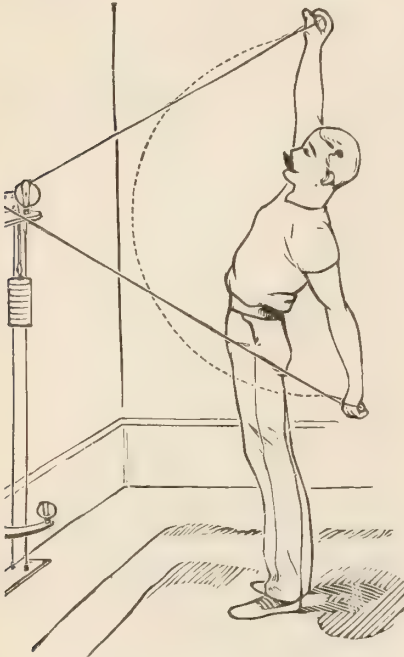


No. 5. Position—face to the weights straight arm out. Movement—both together. Throw the chest forward.

This movement exercises back arm, upper chest, and high back and is intended to *expand the chest* and straighten the shoulders.



No. 6. Position—face to the weights. arms up straight, palms inward. Movement—down and up both together—knees straight, chest forward. This exercise is for the loins and small of the back.

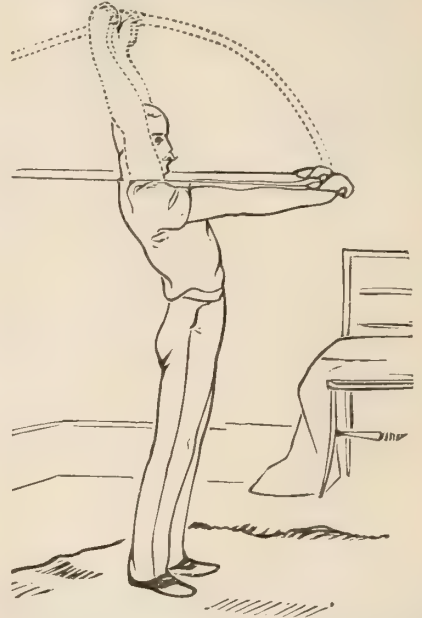


No. 7. Position—face to the weights, arms as shown. Movement—straight, arm up and down, alternating. Body erect.



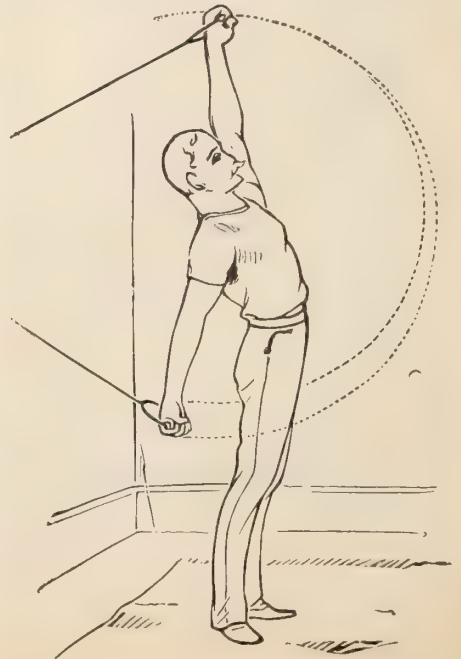
No. 8. Position—back to the weights.

hands and arms as shown in cut. Movement—bent arm over shoulder to arm straight and rigid, both together.



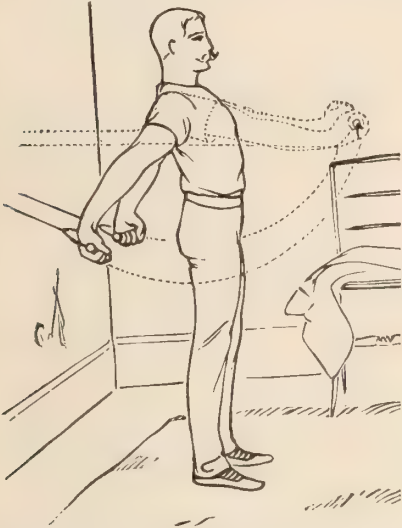
No. 9. Position—back to the weights, straight out in front, hands, palms downward. Movement—arms up and return, both together; chest forward, lungs full.

This movement will exercise the back, arm, shoulders and upper abdomen.



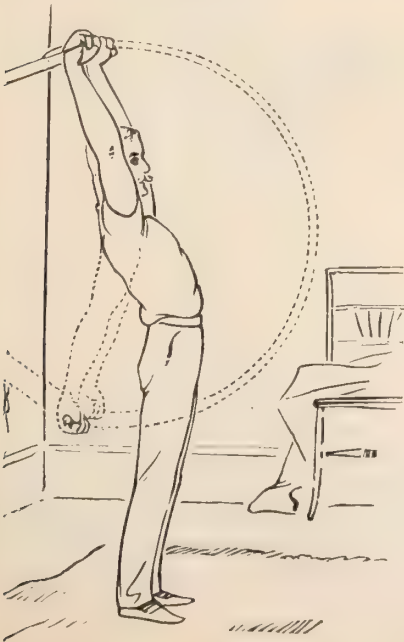
No. 10. Position—back to weights, arms and hands as shown. Movement—up and down, alternating.

This back twisting movement exercises the back, shoulders, chest and arms, expanding the chest and lungs.

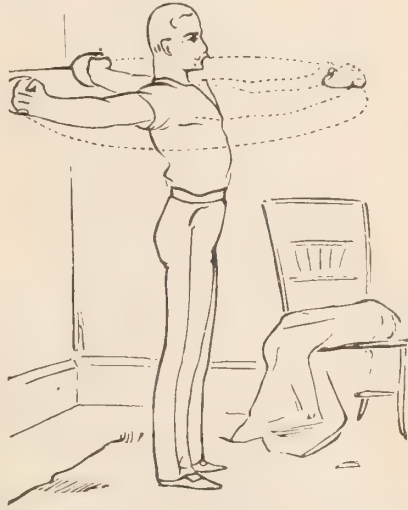


No. 11. Position—back to the weights, arms down as shown; hands palms out. Movement—arms up to level with chest, and return; wrist bent, arm straight.

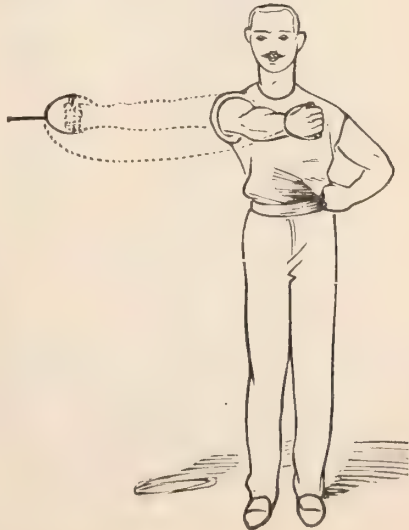
This exercises the back arm, lower chest, front shoulders, etc.



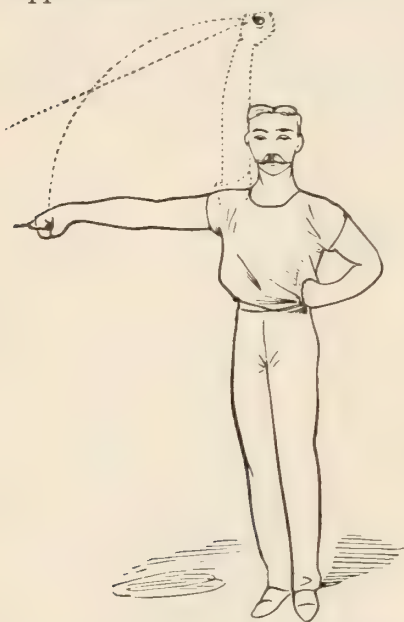
No. 12. Position—back to weights, arms straight up, hands palms outward. Movement—up and down, as shown in cut; turn wrist when arms reach horizontal. This movement exercises the back, arm, upper and lower chest, abdomen, etc., and is very important in strengthening the muscles connecting the body with legs, assuring an easy carriage when walking.



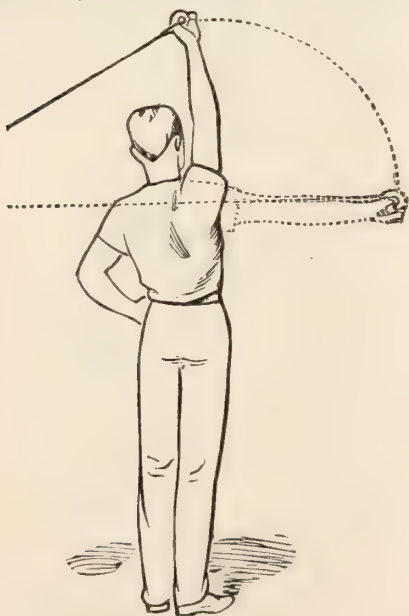
No. 13. Position—back to weights, body erect; hands palms outward. Movement.—Straight arm out to front and return. This exercise expands the chest, straightens the shoulders, upper chest and upper back, enlarges the lung capacity, strengthening same and preventing consumption.



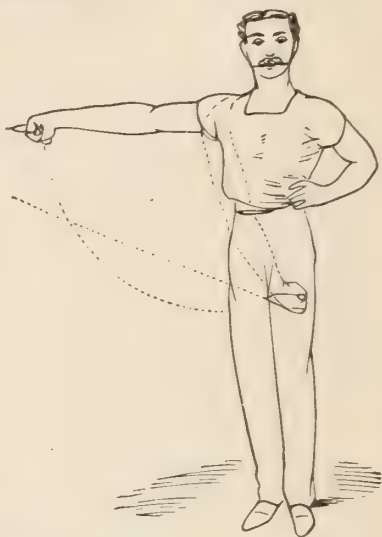
No. 14. Position—side to the weights. Movement—arm across the chest (right and left). This movement exercises the whole shoulder, side, pectoral muscles or upper chest.



No. 15. Position—side to weights (right and left). Movement—arm up straight and return. This exercises upper back, wrist and side.



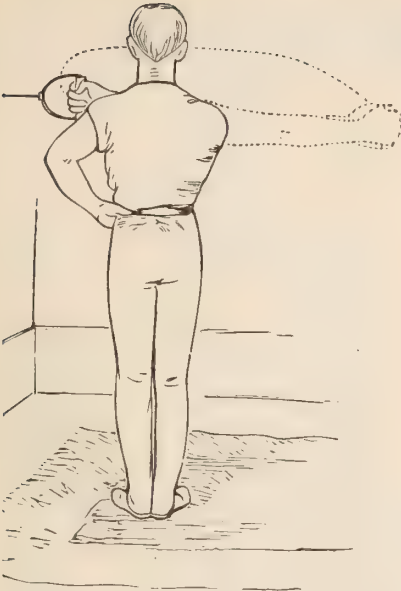
No. 16. Position—side to weights, (right and left). Movement—straight arm to horizontal and return. This movement exercises the lower triceps or back arm, shoulder and side—reverse of No. 15.



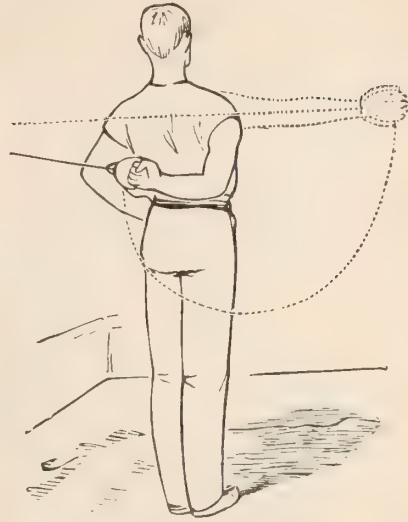
No. 17. Position—side to the weights, (right and left). Movement—arm down to side straight and return. This will exercise the lower chest, upper shoulder, triceps, side, etc.



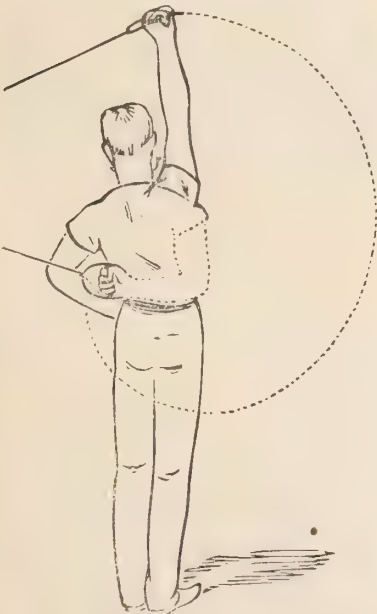
No. 18. Position—side to the weights, (right and left). Movement—arm across the chest straight, firmly. This exercises the back triceps, wrist and back arm.



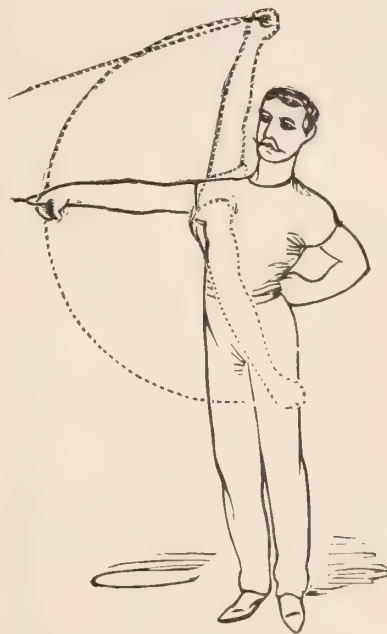
No. 19. Right of No. 18. Position, movement and effect the same.



No. 21. Position—side to the weights, (right and left). Movement—behind back to arm straight and return. This exercises the shoulder and upper arm.

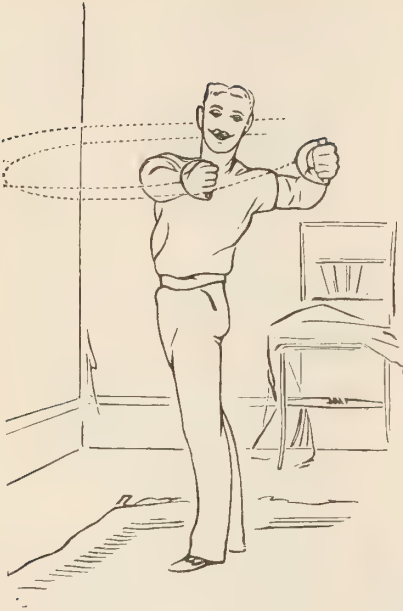


No. 20. Position—side to the weights, (right and left). Movement—straight arm up to behind the back and return. This movement will exercise the biceps, triceps, upper arm, sides, etc.



No. 22. Position—side to the weights, (right and left). Movement—arm up and down. This exercises the muscles of the side, back arm and lower chest.

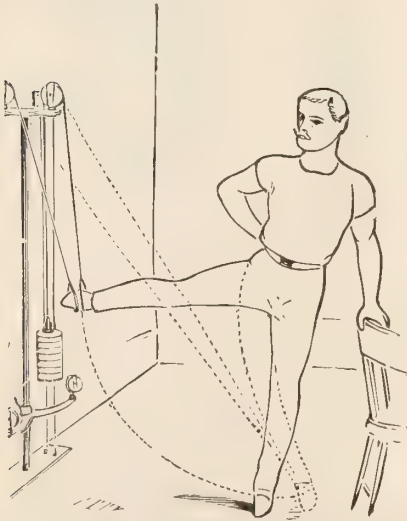
walking, and are usually a weak part. This movement also exercises the hip.



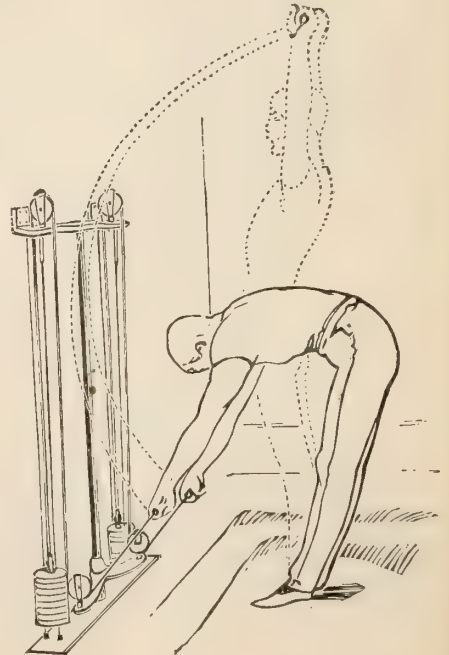
No. 23. Position—face to the weights, arms straight in front, hand's palms in. Movement—both arms together to right and left. This exercises the whole side, waist, upper chest, back arms, shoulder, in fact the whole body, and is one of the best movements.



No. 25. Position—side to the weights, (right, and left). Movement—up from shoulder. Fine exercise for the sides, arms and shoulders.



No. 24. Position—side to the weights, (right and left). Place foot in handle. Movement—leg out to side and return. This will exercise those muscles inside the upper leg which are but little used in



No. 26. Position—face to the weights, (see cut). Movement—up and down forcibly. This is excellent exercise for the small of the back, abdomen, back arm, inside forearm, etc.



No. 27 Position—face to the weights, foot in handle. Movement—leg back and return, (right and left). This exercises back upper leg or thigh, and is one of the best movements known for the thigh.



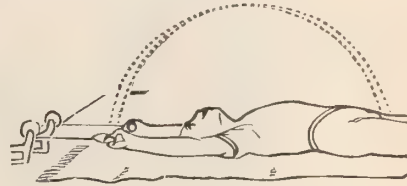
No. 28. Position—back to the weights, foot in handle, (right and left). Movement—leg forward and back. This exercises front thigh, calf muscles and shin.



No. 29.

Position—On back, head to weights, about three feet from pulleys. (See cut). Movement—Horizontal circle with arms.

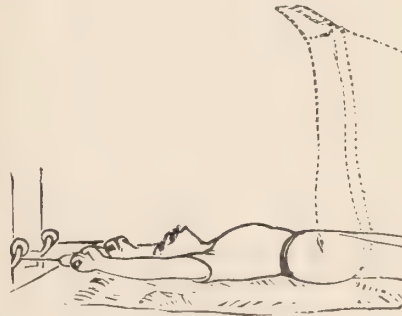
This exercises the shoulder, under the arm, back arm, also chest.



No. 30.

Position—same as No. 29. Movement—vertical circle.

Exercises back arm, abdomen and chest.



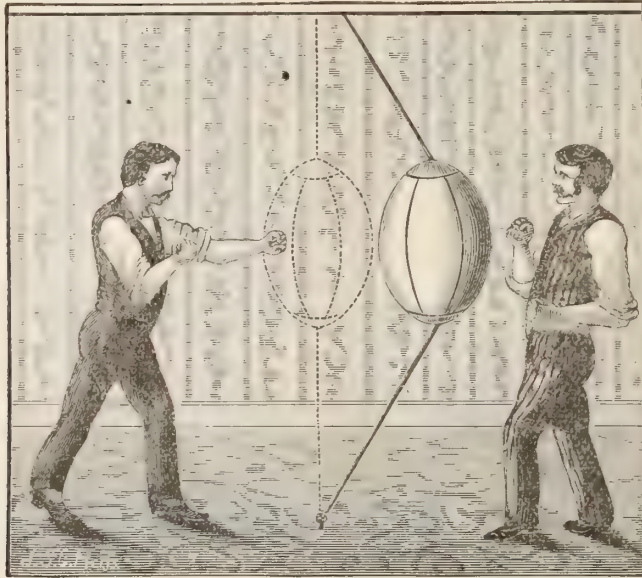
No. 31.

Position—same as Nos. 29 and 30. Movement—leg to vertical and return.

Exercises and strengthens lower abdomen.

STRIKING BAGS.

In our last issue we referred to the striking-bag as a means of physical development; we are now enabled to offer our readers an illustration of the same.



and allows air to pass into the pipes, this being the object of the invention. Dr. Ward states that when the hydrants are placed above ground the apparatus is admirable, but the effect is totally different when they are sunk under

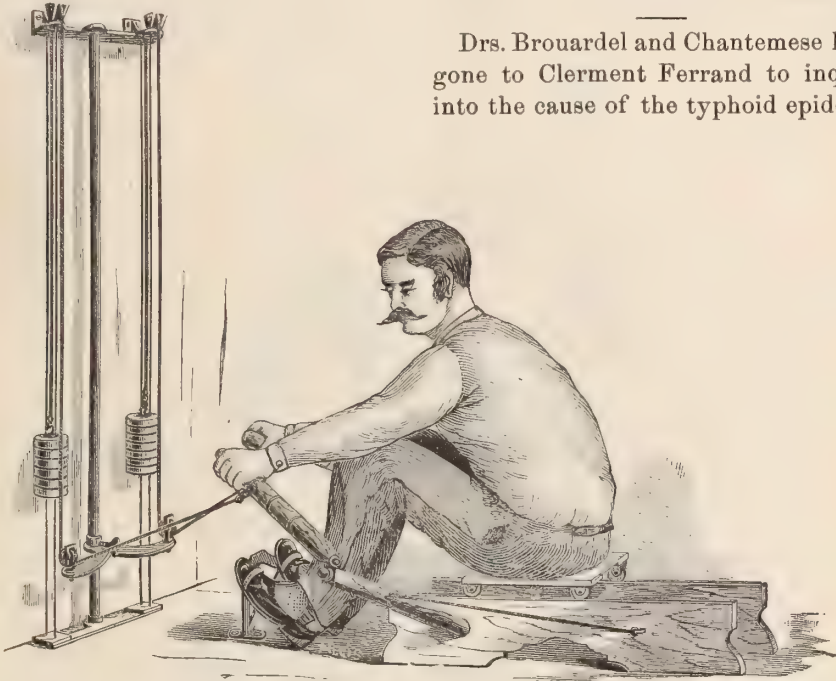
TYPHOID AND WATER HYDRANTS.

Dr. E. Ward, medical officer of Blyth and Tynemouth (England) rural sanitary districts, points out a cause of typhoid which he believes has been hitherto overlooked in connection with water hydrants. He alludes to the apparatus known as the self-acting ball hydrant, which he believes is defective when applied to under-ground pipes. The self-acting ball is the simplest of all hydrants; it consists of a ball of gutta-percha placed within a pipe projecting within the main. When the water is turned on, it is forced up against the aperture, which is smaller than the ball, and so prevents the water from escaping; but as soon as the water is turned off at the main, the ball falls

ground. The hydrants, he says, in his district are sunk under the ground in the middle and towards the end of back streets, at a distance of about seventy yards apart, and are covered over by iron lids loose in an iron socket. They are also placed in many instances close to an ashpit door, so that when the scavengers are at work the hydrants are frequently covered by the contents of the ashpit, the liquid filth of which must frequently drain into and accumulate in the hydrant box, and contaminate the water. That such is the case Dr. Ward is satisfied from close observation, and points out that, in connection with a recent epidemic of typhoid, the people living in close proximity to the hydrants suffered most, the disease being more virulent and fatal than in other localities in the district.

WALL-MACHINE WITH ROWING ATTACHMENT.

WE have here represented an excellent mode of exercise, so well represented by the cut that extended description is unnecessary.



FEARING THE SPREAD OF SMALL-POX.

In view of the spread of small-pox in New York and neighboring states the State Board of Health of Pennsylvania has issued a circular of warning. It urges that not a single person be permitted to remain in the community who has not been protected by vaccination, performed by an educated physician. The circular suggests that every infant should be vaccinated within three months after birth unless competent physicians advise to the contrary. Every child should be revaccinated before it reaches its 12th year, and no child should be allowed to enter

any school unless it shall have been vaccinated within the required time. Adults should be vaccinated once every seven years. The rule requiring a number of persons employed together to be vaccinated should be rigidly enforced.

TYPHOID FEVER IN FRANCE.

Drs. Brouardel and Chantemesse have gone to Clermont Ferrand to inquire into the cause of the typhoid epidemic

there. During the last three months, there have been, in the civil population of 40,000 persons, 1,800 cases, and in the barracks 400. Latterly there have been a large number of relapses among the convalescent soldiers, and in most instances they were fatal. The mortality is greatest among recruits, and among children and young persons between the ages of 15 and 25. There are either fatal consequences or slow convalescence with complications, often followed by relapses. The two medical men think the cause of the disease must be in the drinking-water, samples of which they are bringing back for analysis to Paris.

EXERCISE FOR THOSE WHO LEAD SEDENTARY LIVES.

PARTICULARLY does the lower half of the body suffer among those who lead sedentary lives, who take very little *walking* exercise, and for such the apparatus here illustrated will prove most valuable.



SOME SANITARY HINTS.

When whitewashing your cellar add an ounce of carbolic acid to each gallon of wash before applying.

To prevent drain pipes from stopping up pour a hot solution of potash into the pipes every month or two.

The most effectual remedy for slimy and greasy drain pipes is copperas dissolved and left to work gradually through the pipes.

Use great care when pickling or preserving in a brass kettle. Scour the kettle just before using, and never let

food stand in it after it is cooked.

Galvanized iron pails for drinking water should not be used. The zinc coating is readily acted upon by water forming a poisonous oxide of zinc.

A pail or tub of fresh cold water, renewed several times in the course of twenty-four hours, will absorb all the evil odor of fresh paint in a day or two.

The taste of the water after an hour will prove the thoroughness of its work.

HYGIENE OF CHILDHOOD.

On the 1st of May, 1887, will be opened in Paris an Exposition of the Hygiene of Children. The chief of the Organization Committee is Dr. Chassaing.

The Exposition will be technical in character, and embrace all the agencies which apply in the rearing and hygiene of children until the twelfth year of life; it will remain open a month.

THE HEATING OF SCHOOL- HOUSES WITH FURNACES.

In a "Report upon School Hygiene," by Dr. D. F. Lincoln, published in the "Sixth Annual Report of the State Board of Health of New York," we find the following remarks:

"There is much carelessness about the source of air which is drawn into furnaces for heating, and sent up into rooms. The ground may, it is true, be a pure and inoffensive bit of turf, but that is an unusual condition in a city school-yard. Bad air, malarial air, is known to settle upon the ground in many cases. The ground-level is less reached by the renovating breezes than higher levels. Sundry unpleasant surroundings of school-houses are at the ground-level. As a rule, openings for drawing the outer air into the heaters had better be at points above the children's heads, and covered with wire netting.

"Something more should be said of the cellar. It can not be too often repeated that the purity of cellar air lies at the foundation of the purity of house air. The danger of severe and sudden illness lurks in cellars as often as in sewers. The common practice in regard to a cellar is to bury the drain under its floor—to place water-closets in its darkest corners—to store combustible rubbish in wooden bins (I have seen great heaps of paper scraps)—to pile away old rotten boards and clothes—to hang children's outer garments in it—in short, there are few uses of a menial sort to which it is not put. The cellar is often without a proper floor, often is very dark and close for want of windows, often is darkened by placing the heater-boxes in front of windows.

"To these sources of pollution (for

darkness is one source) add the fact that in cold weather a powerful outside pressure exists, forcing air into the cellar, and thence into upper parts of the house. It is too much to expect that an average cellar will be so pure, so free from all these objectionable things, that air may safely be taken up from it by furnaces for the consumption of the house.

"Let the floor be concreted or asphalted so as to be air- and water-tight. Put no drain underneth, unless in a trench with a wooden or stone cover. Put *one* large trap outside of the walls for each sewer, ventilate it by an opening just inside the trap, run the soil-pipe up full-sized several feet above the roof, and protect it from rain; ventilate the trap under each washstand. Have no water-closets in the cellar; or, if they be thought necessary, isolate them in separate chambers of masonry with abundance of light, accessible to the children from the outside only of the house. Give plenty of windows and good height, and keep the walls white-washed."

THE DAILY LIFE AND MOVE- MENTS OF OCTOGENARIAN GENERAL CAMERON.

EVERY one has heard of Simon Cameron, once Secretary of War, also United States Senator and for many years the political *owner* of Pennsylvania. A correspondent of the *Philadelphia Press* writes:

The departure of General Simon Cameron, on his Winter trip to the Bermudas, takes for a time out of Harrisburg life its great historical figure and its most ruggedly picturesque character. The door-bell of the old stone mansion on the bank of the Susquehanna will be given a long rest that may not be un-

welcome, for an unending string of callers on the old General have kept it peeling pretty steadily for the last three weeks. The life of the great politician and statesman—a life that will have rounded its 87th year in March—has for some years been settled in a round of regularity that a temperament not of perfect equipoise would find monotonous, but which the General varies with thought and discussion, and enriches with reading and recollection.

Even the present trip to Bermuda is not a departure from his regularity of custom. It is the General's habit to make a trip Southward every Winter, usually to Florida. In the Summer he also takes a jaunt, as a rule, either to Bedford or White Sulphur Springs. With these exceptions his life is spent in his home in Harrisburg, and on his farm in Donegal, which he loves to help his grandson, Simon B. Cameron, oversee. When the General is not on the farm, actively looking over the crops with this grandson, he can always be found at his home, and his life is as regular as the movement of a train on schedule time.

It is 8 o'clock exactly when his body servant awakes him and helps him through his toilet, of which the General is nicely particular in every detail. He breakfasts at 9, and then what do you suppose he does all the rest of the day? Why, he does nothing but read—and talk, of course, because everybody who comes to Harrisburg wants to call on him, and everybody who calls is well received. Indeed, the General's affability to his visitors is always leading him a pleasant path through the fields of reminiscence, and on delightful excursions into the possibilities of the future. His chat would make wonderfully interesting reading, but for one reason very little of it ever gets into the

newspapers. That reason is that after an hour's conversation with a newspaper caller the silver-haired host always knocks the possibility of an entertaining article into a cocked hat by slapping his caller on the knee and saying: "Now, of course, this is a private conversation between gentlemen and is not to be printed." Only on some special occasion and for some specific purpose will he willingly be interviewed.

Interrupted by these periods of conversation, then, General Cameron, reads, reads, reads, all day long. He reads first after breakfast the morning papers, the finest type seldom troubling him. Then he plunges into books. His taste is omnivorous. He has a standing order with the local booksellers to send him everything new, from a dime novel to the latest translation of a classic poem. History, travels, fiction, philosophy, poetry, every field of thought and form of literature has a charm for his active mind. At 11 o'clock he eats a light lunch and at 6 o'clock he has dinner, at which his two daughters, Mrs. Wayne MacVeagh and Mrs. Haldeman are his most frequent guests. Promptly at 6.30 he goes up-stairs to bed, not to sleep, but to read again. The servant props him up on a pillow and arranges the gas so that it shines through a glass bulb filled with water. With this clear light and with the aid of a reading glass his eyes feel no strain. At 10 o'clock he turns out the gas and drops into a slumber that is unbroken for ten hours. He seldom varies this daily routine though once in a great while he goes to a dinner party at the house of some old friend. To his regularity of bodily habit, his serene activity of mind and his long hours of sleep are mainly due his wonderful elasticity and vigor at his great age.

AN UNHEALTHY EXECUTIVE MANSION.

The sudden and certainly entirely unexpected death of Governor Beaver's (of this state) 3-year-old boy has aroused the sympathy of everybody, but the comment and suspicion that were excited by the sad event have not yet been allayed. Ever since the death, which occurred at midnight, January 22, there has been lively discussion of the sanitary condition of the Executive Mansion. Governor Beaver and his wife, plucky and brave-hearted as they are, while they mourn deeply the loss of their youngest born, profess to believe that their new home is all right from a sanitary point of view. It is true that General Beaver's boy James came to Harrisburg on the Monday preceding the inauguration with his system in a somewhat disarranged condition, but the attendant physician asserts that after a careful examination he discovered no traces of diphtheria in the child's throat until the Friday morning previous to his death. It may be true that the child brought the germs of the disease with him, yet the Executive Mansion has a diphtheritic record. The first governor to occupy the Mansion was Curtin. Geary followed him, and Miss Maggie, the latter's daughter, then quite a child, came so near losing her life from diphtheria that tracheotomy had to be performed. Next came Hartranft, and one of his young daughters suffered most dangerously from the same disease. A small son of Governor Hoyt's was slightly affected in the same way. Governor Pattison's boy Robert did not die from diphtheria, but after suffering from it he died from an affection consequent upon the disease. Governor Pattison had the plumbing of the Mansion carefully repaired,

and it now includes every sanitary improvement that could be devised. Governor Beaver expresses the belief that not a house in the state has a better sanitary equipment. With all respect for Governor Beaver, we must differ with him. Though we have never been in the Executive Mansion, we yet positively and unhesitatingly assert, with the conviction of science, that the Executive Mansion at Harrisburg is *not in a proper sanitary condition*. This we say, because we *know*, as does every educated Sanitarian, that a history of diphtheria, such as this house presents, cannot exist unless there be some insanitary condition. There must be something wrong with the drainage or ventilation of the house or it must be that proper disinfection was not resorted to after the first case away back in the time of Governor Geary, whereby the germs of this terrible disease have been allowed to remain, to gather fresh force and vitality from development and reproduction in the susceptible little body of some member of each incoming administration. Just where the sanitary defect lies it is not always easy to discover as the experience of Dr. S. D. Risley of this city abundantly testifies. He occupied a handsome mansion on Walnut street for three years, and he tells us that these years were three long horrible nightmares. *His children were always sick*. He would go away for the summer and all would regain their usual health, but six weeks in the city house the succeeding fall would serve to bring back all the old ill-health; and a young lady in the house was, at last, seized with typhoid fever. Finally, going out one morning, when it was a little cool, Dr. Risley told his man to make a little fire in the front furnace. (We should here state that during these three years all kinds

of applianees, recommended by a number of plumbers had been introduced, without avail.) Upon opening the front door, on his return, Dr. Risley thought that he smelt sewer gas, but his assistant, who came in a few minutes later, ridiculed the idea. Dr. R. walked around the block and upon again entering the house noticed the same odor. He communicated with the owner of the property, a plumber was sent, an inspection made and everything pronounced *all right*. Still the odor of the sewer gas clung to Dr. R.'s nostrils, he was not satisfied, and with a most praise-worthy persistency, he summoned half a dozen of the best plumbers he could find, and the universal verdict was that everything was *all right*. To the last one of these Dr. R. said, "I know that all is not right, I know that I smelt sewer gas and I know that something is wrong with my drainage, come to the cellar with me and let us see what we can find."

We next find Dr. R. on his knees, smelling all over the cellar floor. Between the furnace and the front wall of the house he detects sewer gas, but the plumber fails to notice any odor. "Never mind," says Dr. R., "dig up the cellar floor here." What did he find. *He found that the terra-cotta drain running under his furnace was broken into a hundred pieces, the cellar floor under and about the furnace was saturated with sewage, and the fire in the furnace was sucking up this foul air and distributing it through the registers into every room and hall in the house; and this, notwithstanding the fact that perhaps a dozen presumably capable plumbers had declared that everything was all right.* Of course, we do not presume to say what particular sanitary defect exists in the Executive Mansion at Harrisburg, but we do say

positively and without fear of valid contradiction that some defect does exist.

HOW TO TELL THE AGE OF ANY PERSON.

There is a good deal of amusement in the following magical table of figures. It will enable you to tell how old the young ladies are. Just hand this table to a young lady, and request her to tell you in which column or columns her age is contained, and add together the figures at the top of the columns in which her age is found, and you have the great secret. Thus, suppose her age to be 17, you will find that number in the first and fifth columns. Add the first figures of these two columns.

Here is the magic table :

1	2	4	8	16	32
3	3	5	9	17	33
5	6	6	10	18	34
7	7	7	11	19	35
9	10	12	12	20	36
11	11	13	13	21	37
13	14	14	14	22	38
15	15	15	15	23	39
17	18	20	24	24	40
19	19	21	25	25	41
21	22	22	26	26	42
23	23	23	27	27	43
25	26	28	28	28	44
27	27	29	29	29	45
29	30	30	30	30	46
31	31	31	31	31	47
33	34	36	40	48	48
35	35	37	41	49	49
37	38	38	42	50	50
39	39	39	43	51	51
41	42	44	44	52	52
43	43	45	45	53	53
45	46	46	46	54	54
47	47	47	47	55	55
49	50	52	56	56	56
51	51	53	57	57	57
53	54	54	58	58	58
55	55	55	59	59	59
57	58	60	60	60	60
59	59	61	61	61	60
61	62	62	62	62	62
63	63	63	63	63	63

A BILL TO SUBSTITUTE A SINGLE COMMISSIONER FOR THE PRESENT HEALTH DEPARTMENT OF THE CITY OF NEW YORK.

A bill has been introduced into the Legislature, the provisions of which are as follows; It abolishes the present Health Department, and substitutes a "Commissioner of Health," to hold office for six years, at a salary of \$8,000 a year, on appointment by the Mayor. The latter official is empowered to remove the commissioner "for reasons to be stated in writing and published in the 'City Record,' which reasons shall not be questioned in any other place." Except as otherwise provided in the bill, the commissioner's powers, authority, and duties shall be the same as those of the present Health Department. He shall appoint a deputy, at a salary of \$5,000, who may act as commissioner, for periods not exceeding three months, on written authorization by the commissioner, and his ordinary duties and powers shall be those appertaining at present to the secretary of the Board of Health. The bill abolishes the office of the present Board of Health's legal adviser, and authorizes the Corporation Counsel to assign an attorney, with the necessary clerks, to the commissioner's office, a portion of the appropriation for the Health Department to be transferred to the credit of the Law Department, to pay the salaries of these persons. The bill leaves the existing Sanitary Code in force.

THE HEALTH OF NEW YORK CITY.

During the five weeks ending Jan. 25, there have been reported to the

Sanitary Bureau of the Fourth Division of the Health Department 68 cases of typhoid fever and 30 deaths; 215 cases of scarlet fever and 39 deaths; 27 cases of cerebro-spinal meningitis and 25 deaths; 2,730 cases of measles and 322 deaths; 636 cases of diphtheria and 227 deaths; and 30 cases of small-pox and 2 deaths.

TRICHINIASIS IN WISCONSIN.

The death is reported of a man and his wife, who lived at Stevens Point, from trichiniasis contracted by eating the flesh of a pig which was known to be diseased, but from which the man supposed that he had rejected all the infected portions.

THE BOSTON BOARD OF HEALTH.

Dr. Durgin, who has been a member of the board since its organization seventeen years ago, and has rendered efficient service, has been nominated for another term by the Mayor, and confirmed by the Board of Aldermen.

A SYRACUSE SCHOOL CONDEMNED.

The Board of Health of Syracuse, N. Y., has condemned the High School building, on account of defective plumbing. It was built in 1869, at the cost of \$100,000.

WOMEN AS SANITARY INSPECTORS.

A petition with one hundred signatures has been presented to the New York Health Board asking the appointment of six women on the corps of sanitary inspectors.

Correspondence.

THE CONTAMINATION OF WELLS.

EDITOR "ANNALS OF HYGIENE:"

In the October number of your journal I find an article under the caption, "The Contamination of Wells." I believe the opinions there expressed are to the point and in the main correct, but I think they will bear a little criticism.

In the article referred to, the writer uses the following language. "Let us remember that a well will drain an area with a diameter equal to twice its depth. Therefore, a well twelve feet deep will drain an area the diameter of which is twenty-four feet, that is to say that it will drain the surrounding soil for twelve feet in every direction. Obviously then the privy should be more than the depth of the well away from it." Now the inference to be drawn from the above language plainly is, that a well will *not* drain an area whose diameter is greater than twice the depth of the well, or in other words there is no danger of a well becoming contaminated from a privy if said privy is placed at a *little* greater distance from the well than its depth; provided always that the privy is not on a higher level than the well. Now this may be, and probably is, true as a rule, but like all general rules it has its exceptions.

Proof: some few years ago I had occasion to have an excavation made five or six feet in depth, and distant some twenty-one or twenty-two feet from a privy whose vault was about four or five feet deep. When the workmen had reached a depth of six feet a very disagreeable odor was perceptible, which I at once concluded must come from the privy vault, and to test the matter I had a ditch dug in the direction of the privy to within five or six feet of the same, when the stench became so very disagreeable that we abandoned the work, not however until

all doubt had been set at rest in regard to the source of the trouble. I may remark *en passant* that this old privy had been standing on this same spot for a number of years without being in any manner disturbed. Now I think it is evident in this case, that a well at the place where this excavation was made, no more than six or eight feet deep would have been sufficient to drain an area whose diameter was at least three times the depth of the well. It might not have drained the area in all directions, but in the direction of the old privy there is no possible doubt in the matter.

Iberia, Morrow Co., Ohio.

J. C. MILLER, M.D.

SYPHONAGE OF TRAPS.

515 SOUTH 26TH ST.,

Omaha, Neb., 1-18-'87.

EDITOR "ANNALS OF HYGIENE:"

Permit me to call your attention to one point in connection with plate on page 31 of the January number of your journal entitled "A Well-Plumbed House." I notice that while presenting this as a model you have not provided for a ventilating pipe connecting with the outlet of the sink "G," between the trap and the point at which said outlet communicated with the main outlet. Permit me to inquire, do you deny the possibility of the trap at "G" being emptied through siphon action of the stream from bath, etc., above?

I am interested, sir, in your work, and value your journal highly.

WM. MILROY, M.D.,

Lecturer on Hygiene, Omaha Medical College.

It would probably make matters safer to have the soil pipe ventilated. We thank Dr. Milroy for this suggestion.—
EDITOR "ANNALS OF HYGIENE."

The Annals of Hygiene.

VOL. 2.

PHILADELPHIA, MARCH 1, 1887.

No. 3.

Communications.

WHAT THE STATE OWES TO THE PEOPLE AND THE PEOPLE TO THE STATE.*

BY THE LATE HON. ERASTUS BROOKS, OF
NEW YORK.

Late a Member of the New York State Board of
Health.

(Continued from Page 47.)

What the cholera has cost Europe in life and health is beyond human calculation. The known fatal cases in Italy alone during the visitation of 1884 to first of November, 1884, numbered 14,928. In Naples there were 6,629 deaths; in the province of Naples 14,137 cases and 7,576 deaths. In money the cost, chiefly from terror, is placed for the continent of Europe for ten months at nearly \$25,000,000. Its introduction into Paris last year increased the alarm, the mortality and the suspension of business. It returned to Paris in November, not without warning, but the warning was unheeded until the disease appeared in Paris. In Spain the disease was more wide-spread than in Italy. As a present warning to the United States it may be stated that there was no timely inspection of unhealthy dwellings

or hospitals though cases of cholera were found in Paris in June and July.

To show the necessity of calmness and promptness in the kind of work to be done it is proper to state that during the summer, and first Autumn month in Italy, the number of cases reported was 19,762, and the number of deaths from cholera 9,824. In France and elsewhere the epidemic in Paris proved to be the real Asiatic cholera.

Cholera, though not mastered by being stamped out in the same way, is often under control, and its spread into towns and States along the coasts and rivers can be prevented. It comes at first from importation. Importation, if need be, can be forbidden, and by law and care its spread, if it should come, can be prevented. When in 1832, 1848-49, 1854, 1865-66, it entered the United States and Canada, it moved as fast as travelers could be borne by steam to the far West, and left its footsteps of sorrow all along the road from New York and Quebec. So also in 1848 it entered New Orleans from Havre, and forced its way along the Mississippi reaching towns and cities 1,000 miles apart, and surviving the winter, it pursued its ravages over land and water in 1849-50. Had the United States, or Louisiana alone, possessed power now given under existing laws, no such disaster could have occurred.

Sanitary laws properly executed, I need

* The Annual address before the State Board of Health of Pennsylvania. Delivered May 12, 1886. From advance sheets of Annual Report.

not say have prevented and can prevent, the spread of cholera. The law, must be supreme, and not only supreme but cover districts, precincts, towns, counties, states and governments even to the interposition of international authority. There must be the *cordon sanitaire*, as along the vast frontiers of Russia, and maritime law in the hands of faithful officials, and these officials must be sanitary officers, as we have seen them upon the Red sea, the Mediterranean, at Medina and Mecca, keeping back and pushing forward the hundreds of thousands of Musselmen pioneers and herders, who, but for the law and its vigilant observance, would bear disease and death wherever their footprints are found.*

What John Stuart Mills calls "the limits of the province of government" we must agree, whether spoken of the State or of the citizen, excludes no good work. It may and should exclude all needless forms of non intercourse common to the middle ages and in later periods of time, and all oppressive methods of administration, as when petty despots govern the people; but whatever is needed for absolute good of the people in establishing and maintaining the public health must be performed. If the law is bad repeal it because it is bad, or amend it until it is wise and timely. In New York we have a compulsory law requiring vaccination, but it is almost a dead letter

* In England and Wales the death rate has been steadily reduced for ten years and much more in the last five years than in the first. The registrar-general points out more than 281,000 persons surviving the last five years whose deaths would have been recorded had the mean rate of mortality been equal to the ten years, 1871-80. The effect of longevity has been indicated by Mr. Noel Humphrey, who states that the reduction in the death rate from 22.5 in 1838-54, to 20.8 in 1876-80 added two years to the life of every male born, and three years and a half to that of every female.

except in single cities, and vaccination is generally reduced to deeds of charity or to simple individual volition, even when the public welfare requires obedience to the statute. It is the cost to the State that some people complain of, but as a question of State economy I hope I have removed this objection. The real State cost in all the United States at present is less than \$5,000 for each million of inhabitants, and the saving covers the cost ten times over. The civil war is reported to have destroyed 1,000,000 persons. Sick-ness wastes more than war—20,000 a year in London and 120,000 in the United kingdom, and if recorded figures from medical men are true, the equivalent of 700,000 years of individual human life are lost by neglect among the 500,000 of people in the State of New York and 75,000 years of human life are also wasted every year there by sickness, and New York is not worse off than other States of the Union. The life average falls short ten years each of what it should be. So in England also we read the important truth that in healthy districts of the kingdom persons who reach the age of twenty years pass on to the fair age of three-score and three years and nearly a half; while in the general districts death comes within forty-five years. The annual money loss of this single death record, coming from ignorance, neglect and crime, is stated at nearly \$50,000,000, besides the loss from impairment of health and from poverty among those not positively dead, for to each death there is an average of twenty persons who are sick.

When it is known that in smallpox, isolation and vaccination provide the cure for a loathsome disease, the existence of which is concealed where it notoriously is, the law or its officers are at fault. When it is also known that bad air produces bodily and mental disease, and that

proper ventilation, heating and water supply are remedial measures, it is the duty of the law, put in practice, to point out and remove the evil. The law, in some of our cities at least, prescribes where houses shall be built of brick or stone only, and if it is a wise law, may not the construction and drainage, sewage of lands and workshops also be regulated by law? Mr. Edwin Chadwick says that by following out a correct principle three houses may be well drained at the present cost of one. Mr. Edward Atkinson, also good authority, declares that unsafe buildings cost more to construct than fire-proof buildings. It is proposed in England to guarantee dwellings as safe to live in on the score of health, and simply by evidences of proper construction and drainage. When sewer air poisons the blood and produces diphtheria, dysentery, and malaria in other forms, who shall condemn any proper law to prevent poison and self-inflicted murder? So in regard to adulterations of food. Take, for example, the simple article of candy, much of which is reported to be made from grape-sugar, glucose, and "terra alba," the latter being sold at one cent a pound, and the former at four cents a pound, where granulated sugar costs by the barrel ten cents. The cheaper candies may be impaired by impurities, or depreciated in value, from fifty to seventy per cent. It is a public duty to resist all impurities, both in the food we eat and the water we drink, and in the contaminated air we breathe, in all dwellings and all workshops and in all that is around them; and let me say in speaking, alike for State and citizen, that "*obsta principiis*" is the only safe rule of action. When the people of Great Britain discovered that more than one hundred articles were adulterated, the British Parliament as long ago as 1815 passed the best law extant, and since

known as "the Sale of Food and Drugs Act."

This subject addresses itself to the hearts, minds, and bodies, and estates of every man and woman in the land. The real wealth of a nation is counted not in the mines of gold and silver, nor in the more useful metals of iron, lead, copper and tin, nor yet in the millions of acres of land cultivated by between five and six millions of our people; nor in the work produced by half this number of persons employed in the manufactories and work-shops of the people; nor yet alone in the treasures brought up from the depths of the sea, or borne upon the two oceans which surround us; nor from or upon our grand lakes and large or limited rivers. These are grand and stupendous sources of material wealth and physical greatness. But, as far above them all as the heavens are from the earth, as a simple question of value, is the general health of the people. Here alone is true manhood, real civilization, the source of contented life, peace and rest in the family, pervading happiness and substantial good-will among men. Here alone the personal man is the true temple of the undying soul, and only the purified abodes of men are fitting habitations for this vital principle.

We sum up, then, the duties of the Federal government and of the State, in the following order:

1. Supervision over the health of the people; peaceably if it can be done, forcibly if necessary. Where the Federal government has authority, as upon the sea, lakes, rivers, over forts and arsenals, over army and navy, in legislation for commerce, international, inter-State and internal, especially in regard to infected vessels, over animals exported and imported, this authority belongs to Congress. It has been proved, I think, after the

most laborious investigations for nearly two centuries past in this country, that the epidemics appearing among us have been traced to importations. If epidemics in this and other cities seem to disprove this fact, the seeming exception is due to the bad sanitary condition of the localities named, or to the fact, as stated by Dr. Vanderpool, to the germs of disease concealed and dormant in some cellar or room not reached by the purifying air of heaven in the place where the disease exists. The port of New York for four months of the year, is as much exposed as New Orleans to yellow fever, and it is kept from New York, not by non-intercourse but simply by the practice of correct principles of quarantine by vigilant and capable officers.

There has been no national interference in New York as in Louisiana, because the State system in New York was and is so complete that the Federal government acknowledges that with us the State system is about as perfect as it possibly can be. I hope it is as efficient in the port of Philadelphia.

2. State governments are clothed with power over the health of the people within their commonwealth, and over the territory where the Federal government is without this kind of jurisdiction. The colleges and schools of the State, its institutions of charity and learning, its prisons and reformatories, its codes and laws, all that belongs to roads, avenues, parks, canals, docks, piers and even the public and private dwellings, when legislation is needed for health, belongs to the parental care of the State. Epidemics are to be treated like public enemies, and often they are worse than armed foes because more insidious and often beyond observation. They come in foul sewage, polluted streams and wells of water corrupted by cesspools and closets. They

come like a thief in the night and steal away those jewels of the household, the little ones, whose lives are more precious to their owners than all the wealth of the State. To prevent adulterations in food and drugs—not practiced, I hope and believe, to the extent reported or suspected—is another State duty.

To clothe boards of supervisors and trustees in towns and villages, mayors, common councils and health boards in cities, not only with ample power in regard to health, but to require them to pass and enforce ordinances, is a positive duty of the State. A State bureau of Health is essential to secure these results, and its action must be impartial, effective, vigorous, determined, and take no step backward.

3. While Federal and State governments are bound to do what is here suggested, a higher law of duty rests upon the woman of the household and upon faithful men of business. When a woman suggested the first board of health in the State of Massachusetts, the appeal only came when typhoid fever was discovered in a Seminary of learning at Pittsfield. The State cannot secure obedience to law without the sympathy and co-operation of the people. Light and air, cleanliness and order, are the great preservers of health, and the wives, mothers and daughters, as the necessary mistresses of our dwellings, can best serve the State when they secure the greatest possible health in their own homes. Dr. Farr prescribes the right remedy when he says that "health at home is health everywhere," and when he adds, as his conclusion from experience, that "the whole future sanitary movement rests for permanent and executive support on the women of the country." If it be true that "the predisposing causes of insanity of the United States can be traced to

malign influence on childhood," no wonder we had from Dr. Wilbur, of New York, before his lamented death after a most useful life, the startling record that there were 50,000 lunatics in the country, nor that we are behind England, Germany and the age in which we live in our treatment of this class of unfortunate people.

4. A word as to quarantine. Commerce cannot be forbidden; but it may be regulated when hurtful to health. At best, however, State law is only a relative guarantee of the public safety, and sanitary instruction, if heeded, is more important than sanitary legislation. Quarantine and commerce are natural enemies, and the State must regulate the relation between the two—the State always insisting that as far as possible the public health, within its borders, shall be permanent. Every nation, and every State, has the right to use intelligent ways and means to preserve health in and over all its borders, and the Federal government also has rights which must be respected, and laws which must be obeyed. There are natural, legal, wise and conservative lines between nations, States, municipalities and towns. Where the death rate in England is 19.9 in the 1000, in Austria, 31.3, and close on the latter number in all parts of Italy, and where as in the United States, four lives in each thousand of people are absolutely wasted, official action is demanded in the name of public safety.

Your city of Philadelphia, next to London, where the morality has averaged nineteen and a fraction, (here twenty in 1000 each year,) is one of the fortunate large cities of the world for causes I presume, amply discussed in your report. You have not as in New York, 23,000 tenement houses and more; your population is not of alien birth and habits of life.

I have spoken of the unities of the State with brief space left to name the duties of the citizens to the commonwealth.

Among our first duties is to aid, protect, support and uphold the State, in the performance of all obligations to persons, communities, institutions, organizations, and legal authorities. To this secular obligation of common duty may be added so much of that higher law, which, quoting the words of Tillotson, declares that "religion obliges men to practice those virtues which conduce to the preservation of our health.

"Daily duties paid, hardly at first, at length will bring repose to the sad mind that studies to perform them."

With this text, permit me to give the reason for the faith that is in me, trusting that we all may be able to practice the sentiment of one of the poets, that in real life

"The primal duties shine aloft like stars."

If then the State owes order, law and protection to the citizen the citizen owes to the State, in return, allegiance, and self-preservation to himself and to those dependent upon him. The State provides schools for the young, hospitals for the sick, asylums for the deaf and dumb, for the blind, the idiotic, the insane; and poor-houses, reformatories, jails and prisons for the unfortunate and vicious class of people. The greater or lesser number in the several institutions and places depend upon the causes and conditions of those sent, or sentenced to occupy them. The State performs its duty when it provides needed comfort for the absolute poor, and needed punishment for absolute criminals. All beyond this for securing public or private good belongs to personal and responsible administration; and this is true whether the subject relates to institutions or families.

Citizens make the family; families make the State; and States and Territories compose the general government. The safe beginning will, as a rule, always make the safe end. In the State, we are not only to enjoy life, but to live nobly.

Aristotle most truly said that it is only by labor that thought can be made healthy, and only by thought that labor can be made happy, and the two cannot be separated with impunity; where both are best preserved the State life and the life of the citizen will be most secure. Whoever stimulates research into questions relating to the health of the people, secures as the first fruit of that research a knowledge which benefits mankind. This knowledge born of observation, produces the experience which comes from observation. One of the first lessons thus learned is that governments best represent the people, and only represent them, when those in power maintain what is wise and good, and provide punishment for what is dangerous and vicious.

The State in this sense is a civil power, a political power, a governing power of the many by the few,—the many consenting to this form of government, which means the body politic, united and organized to establish and maintain the rights, interests and welfare of the people. In a limited sense, such a government is a district, a town, a county; and these grow into a commonwealth. In a larger sense, it is a league, a confederation, and that form of federal power which most of us now call and respect as a nation. This is the imperial power of the body politic, united for all the purposes set forth in our constitutional form of government, and from which, short of revolution, there can be no dismemberment.

The first duty is the safety of the republic, and the second, like unto it, is the promotion of the six great precepts

set forth in the preamble to the Constitution, and this is true of the public health which is necessary to all domestic tranquility, to all that belongs to the general welfare, and I may add, to justice, in the proper presentation of what is due to the people from the State.

I present this branch of what relates to popular government and duty as of the highest importance to the country and to mankind. Therefore, let the public school room, academy, college and university impart what is due to the State in return for what the State has done for them and is always doing for its children. These duties defined mean sanitary inspections of schools, by competent local Boards of Health and of all public institutions. Among the discoveries to be made are the causes and effect of those terrible diseases diphtheria and scarlet fever, and of all the emanations from malarial and blood poison. Inspectors, teachers, and parents, to arrest diseases like these, owe service to the State. To ensure non-communication, isolation, safety from exposure to draughts and colds, strict avoidance of impure water, disinfection when required of clothing, rooms, workshops, dwellings, and of all exposed places; the special personal cleanliness of all who suffer, and of all in attendance as nurses or otherwise. Where fire or heat are not applied to get rid of what is offensive, fumes of sulphur, copperas and other effective disinfectants must be used; and when death comes let there be no public or family funeral. "The dead," if need be, "must bury their dead." To save the lives of the living by such means shows neither want of sympathy for the dead nor for the living, but just the contrary.

SUBJECTS TO BE LEARNED WITHOUT DIRECTION FROM THE STATE.

I have seen nearly 90 per cent. of children, under two years of age, die, in

New York city public institutions, and I have seen the lives of children of the same age and the same dependence and condition, where less than ten per cent. of the whole number have died in the country nursery and hospital, and not over 20 per cent. in the city nursery. In both town and country the good and bad results came from good or bad administration, and the good as a rule has been, and always will be, chiefly directed by voluntary service. Half as many persons die from being over-fed as under-fed, and the waste of life and the want of health in cases like these—which may be counted by thousands—is born of ignorance and indifference, for which the State is rarely responsible.

The brain, next to the stomach, is to be properly cared for to free children from diseases, known as fear, fright, hysteria, St. Vitus' dance, and kindred diseases, caused or suggested by unwisely directed advisors or educators. Let not wisdom linger when knowledge comes, always remembering, for young and old, that where there is cure by preventive care there need be no cure by medicine.

What are called domestic pestilences—such as scarlet fever, diphtheria, measles, whooping-cough, and even small-pox—are largely preventable diseases, and the remedy is, first of all, personal care, and, secondly, the proper use of what belongs to the atmosphere of the locality. As vaccination is the preventive of small-pox, the reasonable logic is that every man, woman and child should be vaccinated. Diphtheria, with all its mysteries, is shown to be the result of local conditions, whether propagated by a microscopic plant or fungi, from which no one is exempt, and which exists in the mouths or throats of all of us, but with no power of reproduction until it receives fresh vitality from the disordered conditions of the mucous

membrane attending sore throats produced by colds. It is a blood poison in the very sources of human blood, and even in the spleen and bone marrow. The poisoned plant extends to the blood, when diphtheria sets in, and the disease goes out spreading through all possible surroundings. It is declared to be possible, if existing theories hold good, to kill this human monster by artificial vaccination, and it is at least more than possible that this terrible disease may be modified, if not removed. But as it now is, even the convalescent may communicate the worst infection; and hence the necessity for domestic purification.

We read daily how and where impure water has produced, (perhaps it should be said, aggravated) diphtheria and scarlet fever.

In Memphis we have seen the most striking examples of wise and unwise administrations of the people. The change for the better only came after immense suffering and distress; but after it came, it inspired more than a thousand towns in the country to follow one good example. The wrong done increased the mortality to a small population, or from 29 to 30 in each thousand, to 144 colored people and 92 whites. Proper sewerage or drainage, pure water, the closing up of cesspools and vaults, restored ordinary mortality, and the cleansing of the city reduced the death-rate two-thirds. In 1879 the population was reduced to less than 5,000 whites, and in all to little less than one-half, with a corresponding reduction in the value of every kind of property. Half of the buildings with basements and cellars had no proper ventilation. Of 4744 wells and cisterns, 3408 were near privy wells, and in 6000 of these apartments not 2000 were properly built. And just here, and all through the country, may we find the worst enemies of health and of life.

The National Board of Health, by proper remedies—aided in their good work by the best people—reduced the death-rate 20 per cent. in a single year. By a like sanitation the lives and health of very many of the people of Charleston, Mobile, Galveston and Jackson were saved.

The economy of a work like this means, in time, money and work, millions upon millions saved in property, to say nothing of life and health. Of the deaths in Memphis, 15 per cent. were traced to undrained soil and to deficient sub-ventilation in the homes of the people, while 57 per cent. of the total evil came from external causes, and most of all these were preventable by care.

PREVENTABLE DISEASES.

The death rate in India, by the use of sanitary means to prevent the scourge of cholera alone, was once reduced from 22.41 to 3.29, and later to 1.26. Proper sanitation has reduced the death-rate 6 per cent. in Liverpool, 3 per cent. in Manchester, and in London from 1100 in one million, to 400. Sanitation in London has also been reduced in the death-rate from 43.5 in 1685, to less than half this rate in 1880.

(To be continued.)

PHYSICAL CULTURE IN AMHERST COLLEGE *

BY NATHAN ALLEN, M.D., OF LOWELL, MASS.

It is twenty-six years since gymnastic exercises were first introduced in Amherst College, as a distinct department of education. It was an important event, not only in this institution but in the history of educational matters. Certain principles were then discussed and adopted which

have had great influence, in making the experiment there a success. These principles are fundamental, and should be kept constantly in view in all attempts to improve physical organization connected with education.

At the annual meeting of the Trustees of Amherst College in 1860, the writer was appointed chairman of a committee to consider and recommend a plan and regulations for the government of this new department, and, having served every year since on the "gymnasium committee," he is quite familiar with the origin and history of this movement. The questions successfully settled here, will apply to every similar institution. One of the first questions which confronted us in this enterprise, was that the Trustees and Faculty of a College had no right in introducing gymnastic exercises, to make them *compulsory*—that all students must engage in them. It was said that all such exercises elsewhere had always been and were *voluntary*, and not made a necessary part of the curriculum of an institution; that students did not come to college to have their bodies trained but to educate their minds. The answer was, if this education could not be prosecuted so successfully, nor the highest standard reached, without proper exercise of the body and the possession of good health, such exercises should certainly be required.

As the Trustees made the laws of colleges, and were for the time being, the guardians of the students, they must know better than these pupils or their parents, what kinds of exercise were best adapted for their highest welfare and improvement. Lessons in mathematics and the languages are made compulsory, and if it is found that a certain training of the body enables the student to do this work easier and better, and by the same course he would maintain good health through

* Read at the tenth annual meeting of the American Academy of Medicine at Pittsburg, Penn., Oct. 12, 1886.

college, this training of the body should by all means be commanded.

The second question was, in order to make these exercises successful and permanent, we must give them *character*. It was understood that, previously, gymnasiums, manual labor schools, and attempts at physical education generally had failed but there were good reasons for it. One was, the *manner* in which they had been carried on, was not adapted to develop and train the whole body in accordance with physiological laws. Another reason was, that not sufficient importance had been attached to this kind of education, by trustees and managers of institutions, by teachers, by the press and public opinion generally.

The movers in this new department at Amherst determined to organize and start it in a manner to show that they regarded it of the very highest importance—not inferior to any other in college. The first step was to place at its head a thoroughly educated physician, who should be a member of the Faculty—equal in standing to any other teacher or professor in the institution. He should have the whole charge, not only of the gymnasium and its exercises, but he should be a teacher of Anatomy and Physiology, of Hygiene and Physical Culture. Besides, he should have a general oversight of the health of students,—should have a watchful care of them at all hours, and caution them against overwork in study as well as all irregular habits. In case a student was feeling unwell or complained of sickness of any kind, he could freely consult this teacher as though a family physician. Thus by having a living teacher at the head, who is a member of the Faculty and has charge of the health of students, it was intended to give this department the same position and prominence as any other branch of study. Still further; in

making up the merit roll of every student of his rank in the class, this branch was to come into the account—his attendance, his deportment, his interest, and the improvement from the exercises as far as it could be ascertained. In case a student had an organic difficulty of the heart or lungs, or any other physical weakness that disabled him from going safely through with all the exercises required, he would be readily excused by the Professor. No one could judge of this so well as a teacher of physiology. At the same time, if a student in other department of college wanted to get rid of any regular exercise, or get leave of absence, pretending to have some infirmity or to be sick, this medical teacher could easily settle the matter.

KIND OF EXERCISE.

The third question to be settled was to select and arrange a series of exercises—such as would be adapted to produce the best results in a college course of study. The immediate object was to exercise all parts of the body systematically, and in such a variety of ways that the student should maintain uniformly good health, and the whole system—including the brain—be brought into the best possible working condition. Physiology as well as experience teaches that what are called “light gymnastics” are best adapted for this purpose.

In settling the kind of exercise, this depends upon what you want to accomplish. If you want to make expert ball players or boat rowers or train the body to excel in other out-door sports and games, particular muscles or parts of the body must be exercised for this express purpose. But in an institution made up of large numbers, confined in close quarters, all engaged in hard study and wanting to make the most of their time, it is found that light gymnastic exercises, accompanied with music and systematically

practiced a half hour or so every day, work best. At the same time, connected with them, other exercises such as marching, running, singing or of a sporting character should be practiced at times for amusement and recreation.

There is still another class demanding special personal attention. Suppose students come to college with a physical system not well balanced—and there are many of this character—some one part or organ weak and liable to disease. This by careful examination can be easily detected. As in a college or any regular course of study, great and continuous strain must be made upon the body, it is highly important that this weak part should be known and strengthened. The highest measure of health is where the whole physical system is well balanced—where all the organs are perfect or nearly so in structure and each performs its own legitimate function. This is the highest or normal standard of health.

Now, by *special* physical exercise much can be done to change and improve distinct parts of the body in this direction. But it will be seen at once that such special personal exercises cannot be reduced to a system for all indiscriminately to practice. This is individual work and must be a specialty in physical training. At the same time, light gymnastic exercises are calculated to help these personal weaknesses or this defective organization by improving the general health. These two systems of physical culture are each good in their place.

The question may be asked what relation do the regular gymnastic exercises hold to out-door sports and games? We answer as auxiliaries, as helpers, but not as substitutes; the objects are very different. Gymnastics are intended to exercise all the muscles in the body and to improve the general health and strength; while

ball playing, boat rowing and other out-door sports call into exercise chiefly particular muscles and movements. Gymnastic exercises are calculated to promote a harmony, a balance of action and strength throughout every part of the body, while these sports increase the size and strength of certain portions of the body disproportionate to other parts.

Each class has its own specific benefits. There can be no question, however, but the interest and zeal in carrying on physical exercises of any one kind, tends to increase it in all others; especially where there is competition. In gymnastics there is less danger of injury to the body, and certainly far less risk to good morals. If these out-door sports are properly conducted—not carried to extremes—they may prove beneficial to students of all classes, but at the same time there is great danger of their abuse. After all, light gymnastics are altogether the best physical exercises for students in literary institutions. The danger is of carrying out-door sports and games too far, of consuming upon them too much time, of diverting attention from study and creating an unpleasant competition.

TEACHERS OF GYMNASTICS.

What has contributed much to the success of physical culture in Amherst College is the fact that it has had at its head a man admirably fitted for the place, Dr. Edward Hitchcock. In 1860, when this department started, Dr. J. W. Hooker, then a recent graduate of Yale College and also of the Medical School, was placed in charge of it. He had been thoroughly educated in physiology and hygiene, under the instruction of his father, Dr. Worthington Hooker of New Haven, Ct., distinguished as a writer and teacher. Dr. Hooker made a fine start, but near the close of the year his health failed and he resigned and died in a short time afterward.

In the summer of 1861, Dr. Edward Hitchcock, then a teacher in Williston Seminary, and a graduate of the Medical School of Harvard University, was invited to take charge of this enterprise. The remarkable success that has attended his labors and instructions here for twenty-five years afford the best evidence of his peculiar fitness and qualifications, that "the right man is in the right place." When this department started some looked at it as a doubtful experiment; others feared it would be an encumbrance upon the institution, but the general verdict now, we believe, is, the college could not well get along without it.

That Amherst College has taken the lead in physical training and instruction in respect to the laws of health there can be no question; and that also great benefits have been derived from this course. Before presenting some facts bearing on this point, we give the testimony of an individual who ought to be a competent judge. Says President Eliot of Harvard University: "It is to Amherst College that the colleges of the country are indebted for a demonstration, for the proper mode of organizing the department of physical culture."

It can, we believe, be safely stated that no other large literary institution in this country or in Europe has for a quarter of a century conducted physical education so successfully and so thoroughly as this college. One of the secrets of this success has been, that the department at its very start was placed upon high ground, was treated with an importance and character equal to the classics, or mathematics, and like these its exercises were made obligatory and its results, like these also, entering into the merit-roll of every student. But a stronger argument still, was that the students themselves became from year to year so convinced of the great advantages

of these physical exercises in improving their health and perfecting their scholarship, that they would not give them up on any account. While the present rank of scholarship cannot be tested with what it would have been without these exercises, nor can it be compared with what it once was, before they were introduced, there can be no question but that the present scholarship of students is of a higher grade and character.

HEALTH.

In the matter of health the facts are more obvious. A careful account has been kept every year of the sickness or loss of time from every kind of complaint of the students, and it has been found to be steadily diminishing; but what is more striking, less and less in each class. The Freshman class have the most; the Sophomore not so much; the Junior still less, and the Senior the least of all. Thus year by year each class steadily improves in health, showing the immediate benefits of such exercises. This is the reverse of what occurred thirty, forty and fifty years ago as our experience extends over that period. No statistics of sickness or loss of time from illness were kept at that time, but we distinctly remember many cases of fever and other complaints of students breaking down in health and leaving college. In my own class there were seventy-two entering in 1832, but only thirty-eight graduated in 1836. There were five deaths in our college course and several more died within a few years afterwards. This class may be more marked for its changes than some others, but generally the ranks of every class were more or less reduced by ill-health and death. Not very few students in college leave or give up study on account of failing health. While we cannot give figures on this point we know there has been a decided improvement.

Another marked feature resulting from physical training, we believe, more than from any other is a change in the countenance and physique of students. This applies particularly to students in the advanced classes and to those graduating. Perhaps no one thing affords stronger evidence of good health and a high state of vitality than the human countenance when carefully scanned by an expert sanitarian. Now from an experience of fifty years with the college and in attendance upon many commencements, we can testify that there has been a marked improvement in the countenance and physique of students. Formerly there were more or less students with pale, sallow countenances, sometimes too spare, with a haggard, careworn look, and without much expression; but such a specimen is now seldom seen; their countenances indicate a freshness and glow of health, with a clear skin and lineaments distinct and expressive, animated with highly-arterialized blood.

The body is better and more evenly developed in all its parts, and when moving or standing, its position is erect. The limbs perform good service, with movements easy and graceful, but at the same time prompt and vigorous. The whole appearance of students, with the changes of countenances and movements of the limbs, indicate a high state of physical health, vigor and strength.

There is still another advantage gained, the value of which cannot be estimated in figures nor fully described in language. By means of gymnastics and instruction in hygiene the constitution of the student has been greatly strengthened, and regular habits have been formed favorable to good health, not merely while in college but that will last through life. The student has thus laid the foundation for good health in all his future years. At the same time he has accumulated an

amount of knowledge in respect to the laws of health which will become more and more valuable.

President Eliot of Harvard University says: "The more I see of the future of young men who go out from these walls, the more it is brought home to me that professional success, and success in all the learned callings depends largely upon the *vigor of body*, and that the men who win great distinction have that as the basis of their success." This testimony, we believe, can be substantiated by a multitude of witnesses. How important, then, that every young man in passing through college should preserve his vigor of body, yes, strengthen his whole system and learn to take the best possible care of it!

By means of the experience and knowledge these students obtain in respect to the laws of health, while in college they become afterwards *teachers of sanitary science*. From the great advantages which they have derived from it, they will be disposed by precept and example to extend its benefits to others coming under their influence. Thus a powerful agency is introduced for diffusing valuable information in the community as to the preservation of health and prevention of disease. In this way an immense amount of good will be accomplished.

There are still other advantages from this gymnastic training. It is an essential aid in securing better discipline in the institution. These exercises serve to give a safe vent to an excess of animal spirits which otherwise might result in acts of mischief or trouble of some kind. This physical training is calculated to develop not only all parts of the body, but to make it symmetrical and well-balanced throughout. Such an organization tends to give its possessor self-reliance, self-control by means of which he can turn to

better account the activities of both the body and the mind.

We have stated that light gymnastics afford the best kind of exercise for students; they harmonize with the laws which regulate the growth and changes in the various organs of the body; they are convenient for use, and economize time; they can be directed and controlled better than out door sports and games: in fact, the great objection against inter-collegiate sports and games is they cannot be controlled or regulated by any one united power, there is constant friction and complaint, and not unfrequently ill feeling and bad temper.

EXAMPLE AND INFLUENCE OF PHYSICAL CULTURE AT AMHERST.

There is another point that deserves notice—the example in starting physical culture at Amherst and its influence. In the history of education the time had probably come for some such development. At this period—about the middle of this century—the times had brought upon the stage men who had had much experience in educational affairs and were disposed to take a more practical view of the subject. Among these was the Rev. Wm. A. Stearns, D.D., who became President of Amherst College in 1854. He had resided many years in Cambridge and was for a long time a member of the State Board of Education. In his new field of labor, at the head of a large institution composed of young men, his attention was arrested by the failing health of many students, as well as the early death of several. With great earnestness he brought the subject before the Trustees and inquired if something could not be done for the physical education of students. This appeal produced at once a strong impression on the Board of Trustees. The writer having for years made a special study of physiology in its application to education

and health, and fully appreciating the importance of good health to students in college, was prepared to second President's Stearns's appeal and to enter heartily into the work.

This department at Amherst was fortunate in its organization at the start. It soon became popular with the students and enlisted favorable notices from the press. Being something new, it attracted the attention of the public and especially those at the head of educational institutions. Within twenty-five years the interest has greatly increased in the study of physiology and its application to physical improvement connected with education and health. The managers of most of our colleges and seminaries have been waking up more and more to the importance of the subject. Some institutions have already built large gymnasiums and others are taking steps in that direction.

It is reported on good authority that over fifty large institutions in our country have either adopted some regular system of physical culture or are making preparations for the same. So intimately connected is a proper care and development of the body with mental and moral improvement, that this reform cannot go backward or remain stationary. The more thoroughly the interdependent relations between the mind and the body are understood, the greater will be the value attached to a sound, healthy and well trained body.

In this sketch of physical culture at Amherst some notice should be taken of the superior advantages there for carrying on this work. The first gymnasium, erected in 1860, became too small and inconvenient as the classes grew larger. As a result of the deep interest felt in this department by one of its own students—a graduate in the class of 1879—Mr. C. M. Pratt of Brooklyn, N. Y., the college

is chiefly indebted for its new, magnificent building, called "Pratt Gymnasium." It was planned by Dr. Edward Hitchcock after many years experience as to what provisions were necessary in such an establishment, not only for conducting every variety of physical exercise but for securing at the same time the comfort, improvement and health of the students. While the building has a large main hall for general exercises, it has numerous other rooms of different sizes, most conveniently constructed, located and arranged for all needful purposes. It has provisions for every kind of bath, with abundance of water, cold and warm. From a careful inspection of the apparatus, equipments, conveniences, &c., it would seem that everything was here provided that is possible for the highest welfare of the students.

In closing this paper some account should be given of the measurement of students. We cannot here go into details, but only make a general statement. Upon the admission of every new class to college, each student submits to some sixty different measurements of his body and its parts, as weight, height, lung capacity, girth of chest, arm, &c., &c., and an exact record of all these measurements are kept. These examinations are repeated every year, and since they commenced, about twenty-five hundred different students have been thus measured. In a report just published by Dr. Hitchcock of twenty-five years experience in gymnastics, there are twelve tables containing the summing up or results of these measurements. They show an immense work—that thousands and thousands of figures have been employed to obtain these results. As an illustration, one table alone contains over 600,000 figures.

While these measurements have a present value to every student and to the

cause generally, in the course of time they become invaluable in aiding to settle some problems in vital statistics connected with physiology, biology and anthropology. The statistics thus gathered will bear fruit through successive generations.

SANITARY EXAMINATION OF THE EXECUTIVE MANSION AT HARRISBURG, PA.

BY BENJAMIN LEE, A.M., M.D.,
Secretary State Board of Health of Penna.

On the fourth day of February, 1887, I made a careful sanitary inspection of the Executive Mansion at Harrisburg. I was assisted in my investigation by Mr. James G. Bryan, a skilful, practical plumber of Philadelphia, on whose judgment I place great confidence, by Dr. Hugh Hamilton, Chairman of the Sanitary Committee of the Dauphin County Medical Society, by Mr. Neil, the plumber who has done the recent plumbing work in the mansion, and by Capt. Stackpole, Superintendent of Public Grounds and Buildings, who courteously afforded me every opportunity for making the examination.

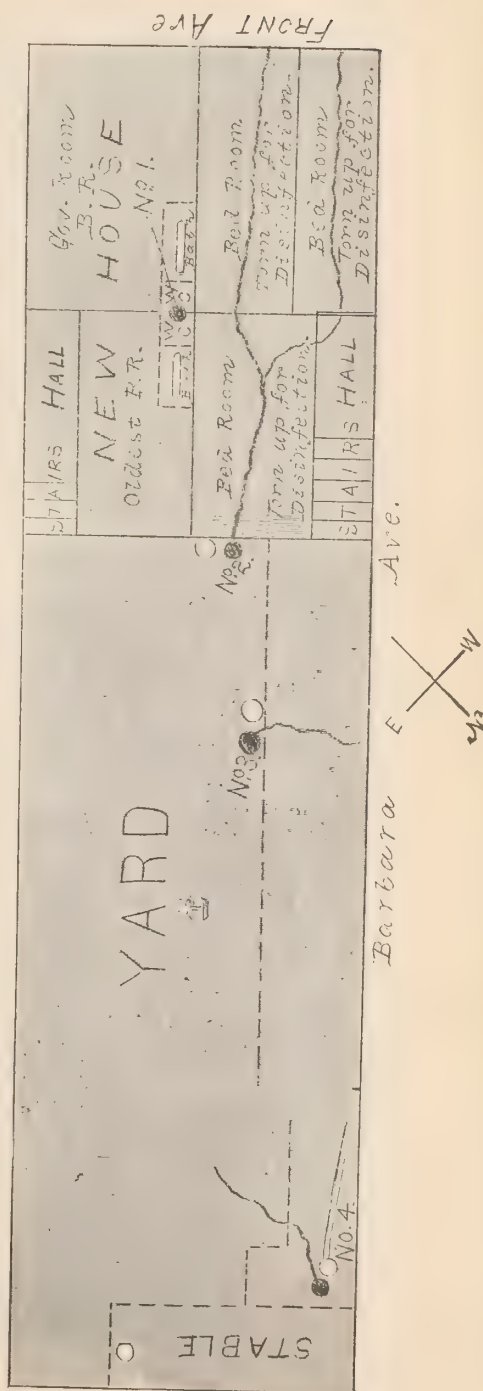
The appliances in the third story front bath-room and water-closet, where the inspection was begun, were found to be modern in style, of the best quality and superior workmanship, downward ventilation of the seat being secured by carrying a vent pipe into a chimney flue and running it up all the way to the top; inside the flue holes in the ceiling of this room, which had been papered over, indicated that at one time this closet had been a source of serious annoyance to the occupants and undoubtedly a cause of disease. A water-closet adjoining this one, I was unable to examine, owing to the fact that the doors of the chamber to which it was attached were locked, and in the absence

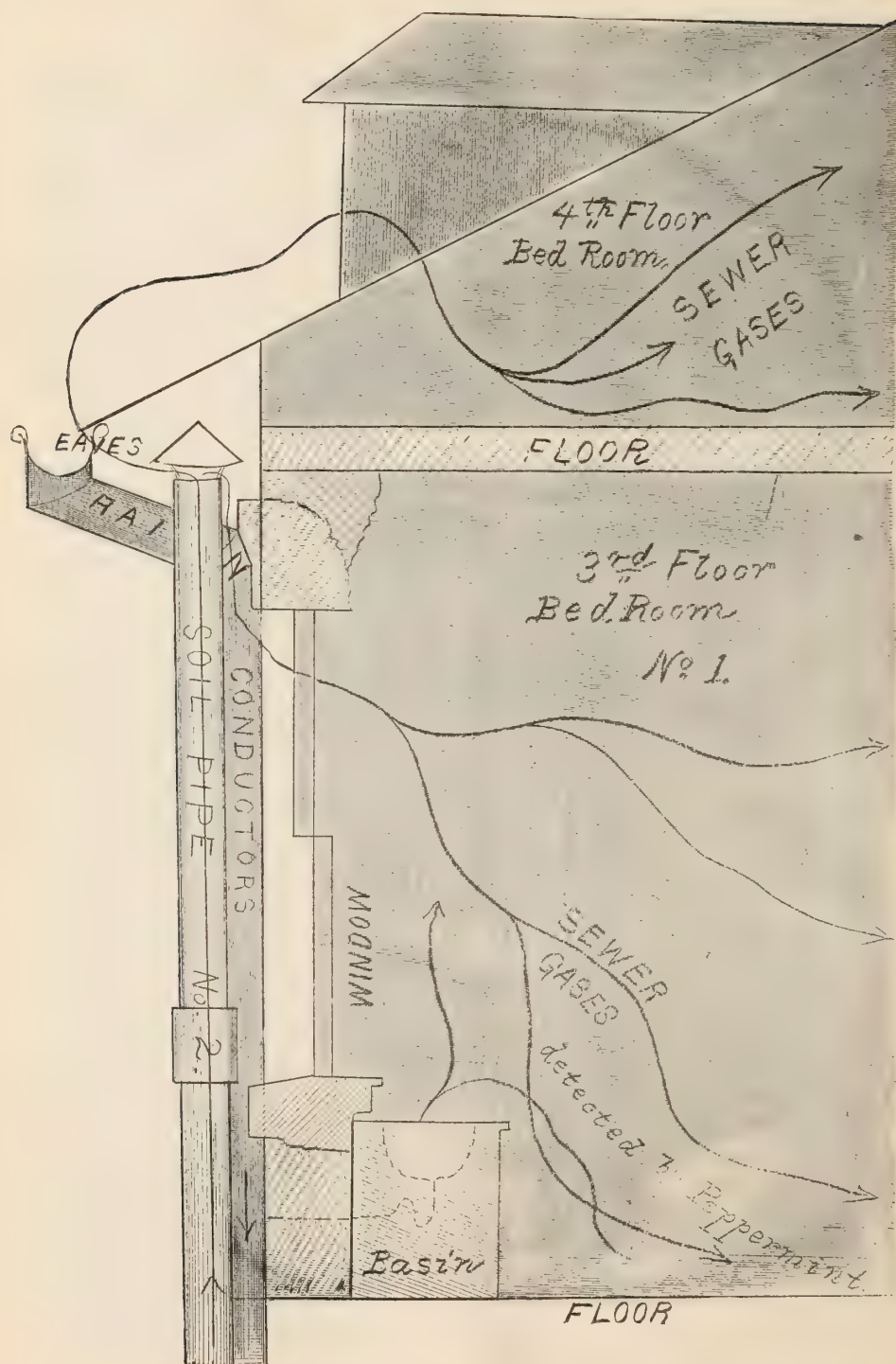
of the family the keys could not be found; but I was assured by Mr. Neil that the appliances and work were identical with those in the front room. The soil stack through these rooms runs up its full diameter through the loft to a point several feet above the peak of the roof. The cowl was removed from the top of this stack and oil of peppermint poured down it, the assistant who did it remaining on the roof until the inspection was completed, in order that he might bring no odor of peppermint into the house and so vitiate the test. The next point examined was the bath-room on the second floor of the back building. Here the soil pipe was found to be carried up through the roof of the back building, thence along the top of the roof to the wall of the main building, and thence up this wall, outside, to terminate just below the eaves.

In the bed room in the third story over the bath-room was found a stationary washstand, the waste pipe of which was extended up outside the wall and likewise terminated below the eaves near the soil pipe just referred to. The open mouths of both of these pipes are in close proximity to windows on the same story and beneath windows on the story above. It is scarcely necessary to point out with what ease the foul exhalations from them could enter these windows when opened for purposes of ventilation.

If the nearest window were left down from the top during the night, as is often done, with the wind in a favoring quarter, they would, to a considerable extent, take the place of the fresh air which the unsuspecting occupant of the room supposed himself to be getting. The situation here is closely analagous to that at the Reform School at Morganza, where I found an epidemic of filth fever prevailing, which I could trace to no other cause than the rain spouts which entered the sewer

Showing the third floor bed rooms used by Governor Beaver. In Chambers Nos. 1, 2 and 3, the vitiated gases from soil-pipe No. 2 permutated.



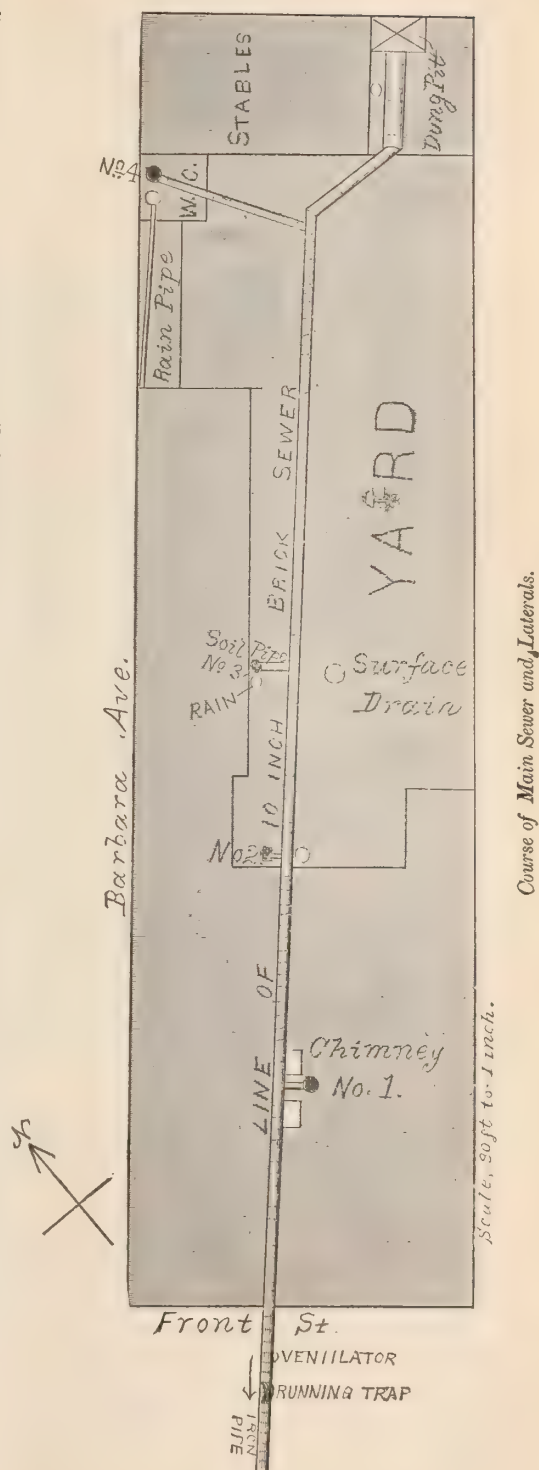


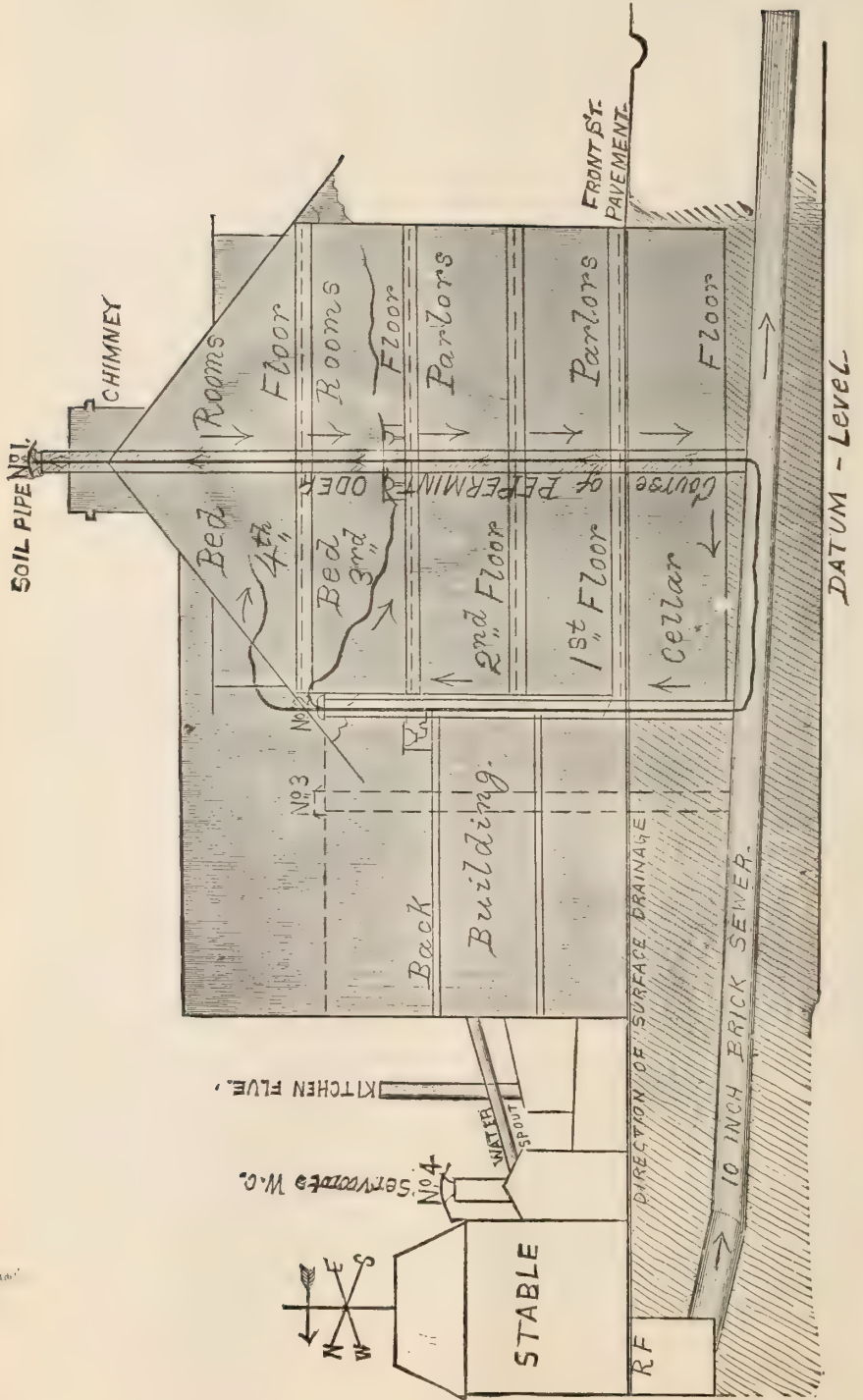
Elevation ; showing termination of Soil-Pipe No. 2 in eaves of Main Building.

untrapped and opened in the gutters of the roof close to the windows of the dormitory in which all the cases attacked had slept. As an evidence that this danger is not imaginary, in the case under consideration, I may say that the odor of peppermint was discernible on opening the windows referred to. The only way in which it could have reached them was by descending the sewer through the front soil stack, down which it was poured, finding its way up the sewer, and ascending the rear soil stack.

The waste pipe of the kitchen sink was found to run into a four-inch trap directly under the floor, and thence by a four-inch pipe into the sewer. This large trap is objectionable as furnishing a receptacle in which vegetable and animal matter may collect and decay.

The sewer referred to is the private drain of the house. It consists, according to Mr. Neil, of a ten-inch brick sewer, running from the stables in the rear of the lot, much of the drainage of which it receives, through the yard directly near the main building, and so out across the street to the river, where it discharges. Its entire length is upwards of three hundred feet. Lateral branches admit the soil pipes, surface drainage, hydrant waste, and rain conductors, the latter all said to be untrapped. The soil pipes were in good condition in the cellar, which was scrupulously clean. But the floor was simply earth, a loose loam, damp all over, but especially so in places. Should leakage take place from the brick drain referred to, the resulting gases would find no difficulty in working their way up and poisoning the air of the cellar and so that of the house. The outer end of this drain was cut by Mr. Neil two years ago, a ten-inch running trap placed on it just outside the curb, with a four-inch air-inlet pipe protected by an iron grating





Executive Mansion—side elevation. Arrows show probable course of sewer.

inside the curb, and an iron pipe extending to the river.

Scientific drainage no longer permits a brick drain to be carried underneath a dwelling. The irregularities of the bottom form frequent receptacles for the lodgment of decomposing matter, and they are liable to leakage and to perforation by rats. At the recent Annual Conference of State Boards of Health at Toronto, in which this board took an active part, the delegation from Indiana submitted the question, whether it was allowable to run such a drain under the Capitol Building which was not to be used as a dwelling at all. The conference was unanimous in condemning the project. I am therefore led to condemn this sewer most unqualifiedly, and to make the following *suggestions* for improving the *sanitary condition of the Executive Mansion*:

FIRST.—The brick sewer should be torn out and replaced by a No. 1 terra cotta, vitrified pipe, carefully laid in Portland cement, each joint wiped smooth, and each lateral branch connected with a Y branch.

SECOND.—All the rain conductors should be trapped below the frost line.

THIRD.—All the surface outlets should be trapped below the frost line and covered with cesspools.

FOURTH.—The rear end of the drain pipe should be ventilated by a stack of four-inch soil pipe in the coach house, extended well above the roof.

FIFTH.—The soil pipe of the second story bath-room should pierce the rear wall of the house, and be extended upward inside the wall to the attic, and thence out at the ridge, to a sufficient height above the roof of the main building.

SIXTH.—The waste pipe of the stationary basin in the third story should be similarly carried up inside the wall and

made to terminate above the ridge of the main roof.

SEVENTH.—Two two-inch lead anti-siphoning pipes should lead from outside the seals of the two water-closet trap attached to the front soil pipe, and should connect with the soil pipe above all traps or outlets.

EIGHTH.—The four-inch trap of the kitchen sink, underneath the floor, should be replaced by a two-inch trap immediately beneath the sink.

NINTH.—The rear rain conductor should be removed from the servants' water-closet in the yard and the pipe capped. This conductor should then be connected, properly trapped, with the drain directly back of the kitchen.

TENTH.—A two-inch seat vent should be run from the servants' water-closet to the kitchen smoke flue.

ELEVENTH.—The cellar floor should be well laid with cement.

TWELFTH.—This work should not be given to the lowest bidder if there is any possible way in which this ingenious device for obtaining the poorest possible return for the outlay for the people's money can be avoided. The health of the Governor of this Commonwealth and that of his family are too valuable to be trifled with by sham ventilators and scamped plumbing. The repairs should be entrusted to a respectable and competent plumber, whose instructions should be to use the most expensive material and do the work in the most approved manner, without limitation as to cost, and for such material and such work he should be fairly and fully paid. This must not be construed as reflecting in any way upon the plumber recently employed on the mansion, whose work was well done, of good material and, under the restrictions to which he was subjected, scientifically designed.

Having completed the inspection of the gubernatorial residence I, under the guidance of Dr. Hamilton, extended my investigation to the adjacent neighborhood. This convinced me that the natural drainage of this part of the city is away from and not towards the river; that this natural drainage has been seriously interfered with by filling in with city dirt; that in consequence a considerable section immediately in the rear of the Executive Mansion is more or less saturated with moisture, which once found its way unrestrained into natural outlets. This region covered with houses, many of them of the poorest possible character, Dr. Hamilton assures me has been for years back a breeding place of diphtheria and allied diseases. This being the case, the question naturally forces itself upon the mind, whether the dignity of the Commonwealth and the interests of true economy would not be better subserved in erecting a new Executive Mansion than in attempting to patch up a building confessedly of poor construction, a make-shift not originally erected for the purpose, in which two deaths have occurred under circumstances leading to the suspicion of insanitary conditions, which has twice recently narrowly escaped destruction by fire in consequence of defective architecture, which is notoriously uncomfortable and inadequate in its domestic arrangements, and unfortunate in its immediate environment from a sanitary stand-point.

ON WHOLESOME WATER FOR CITIES AND TOWNS.*

BY CHARLES SMART, M D., MAJOR AND SURGEON U S. ARMY.

The purest and most wholesome natural

water is derived from springs that are distant from human settlement. The rain-water, falling from the clouds and precipitating with it the impurities that have accumulated in the atmosphere, is absorbed by a porous stratum of the earth's crust through which it filters until it again reaches the surface as a clear and sparkling spring-water. During this process of percolation through a virgin soil all causes of turbidity are removed, and the nitrogenous organic matters existing in solution are converted into harmless inorganic compounds. In its progress the water becomes more or less charged with inorganic gases and mineral salts, but these, so long as they do not interfere with potability and economic uses, are not only harmless, but endue the water with a wholesome sapidity.

The early settler went to the spring for his water or tapped the water bearing stratum at his own threshold; but this latter mode of obtaining a supply came in time to be attended with the danger of a contaminated inflow. The foully saturated soil of our growing settlements at the present time renders it imperative that we either go to the springs, like the early settler, or have the spring-water brought to us. In choosing the latter method, a certain deterioration in the quality of the supply is accepted in part payment for the convenience of tapping the springs on every floor of our houses. The waters of many springs have to be impounded, or those of innumerable springs have to be pumped up from the flowing river. In either case the percolated waters are mixed with a surface inflow, the purity of which depends on the character of the surface which conveys the rainfall. A strict surveillance over the limited water-shed of impounded springs may protect the supply from all impurities, save those precipitated from

* Read before State Sanitary Convention.

the atmosphere and the vegetable and mineral matters washed from the surface of the soil. When the water is taken lower down from the river current, the impurity is increased, because the larger area of the water-shed cannot be so well protected from the harmful effects of its settlement. Besides vegetable decay and fine mineral particles, a certain quantity of the wastes of human life and human industries will contaminate the supply. Vegetable matter washed down from the uplands or draining into the current from stagnant ponds, swamps and marshy bottoms, and animal matters contributed by the sewage of the upper settlements are the dangerous substances that enter the water supply derived from the river current.

The chemist can determine with accuracy the elements of the organic matters in a water. He can in many cases state whether they existed mainly in the form of vegetable or of animal matters, and in certain cases he can point out the existence of recent sewage; but he cannot state whether the organic matter discovered is of a harmless or a deleterious character. Ordinary or non-specific vegetable matters are apparently harmless in water, unless present in such quantity or in such a state of fermentative change as will give an observable taint to the supply. So with ordinary or non-specific animal matters, among which are included those known to exist in what has been called *healthy* sewage. But certain specific organic matters, sometimes present, are known to be exceeding unwholesome. These are well recognized facts. Unfortunately the chemical processes fail to differentiate between the ordinary and the specific organic matters. The dictum of the analyst is based upon the assumption, that where there is a large impurity the likelihood of a specific accompani-

ment is greater than where there is a small impurity. His results may authorize a verdict of probable unwholesomeness; but in no instance in which the sense of smell or taste is unaffected, can he be more explicit on this side of the question, and in no instance whatever can he give an assurance of wholesomeness.

On the other hand, when the laboratory results are compared with the data furnished by a thorough investigation into the sanitary aspects of the case, a new light is thrown upon them by which much of their ambiguity is removed. But by sanitary investigation is not meant a mere survey and enumeration of the sources of polluted inflow, but an inquiry into all the points which bear upon the propagation of disease by the water supply, and especially for those diseases which the collected experience of the medical profession has indicated as connected with a polluted water. The indigenous diseases thus associated are not numerous. They consist of fevers that are more or less continued and of fevers that are essentially paroxysmal in type,—of typhoid fever and of malarial fevers,—the one intimately connected with an *animal* impurity in the water, and the other as intimately connected with a *vegetable* impurity.

The incompetency of the chemical processes to pronounce on the unwholesomeness of a water is more frequently illustrated when animal matter is in question. Waters comparatively free from vegetable impurities have never been accused of malarial possibilities,—while waters largely thus contaminated have often been so charged and adjudged guilty. But a water which has been the apparent propagator of typhoid fever may or may not be found foul on analysis; and waters manifestly foul from sewage inflow have

been used for long periods without producing an injurious effect. The recent records of medicine are full of instances in which a well with sewer or cesspool connections has been used for years with no harmful results so long as the sewage inflow was small and of an ordinary or non-specific character; but as soon as a specific infection was added, the well has become a centre of typhoid propagation. Whether the specific infection is always derived from the intestines of an antecedent case of the disease or is generated in an impure soil under certain conditions is immaterial to the present argument. It is sufficient to know that the infection is present in the typhoid excreta, and that, when any of this infected matter percolates into the well, fresh cases of typhoid fever are developed in susceptible persons, who make use of its waters for drinking purposes. Usually in such wells the sewage inflow is so great that the chemical results show an undesirable contamination; but in many instances the inflow is so small, or the purifying influence of the percolation through the soil is so great, that the infected water may give a fairly good showing on its analytical record. In other words, the quantity of infected sewage necessary to the spread of typhoid by a well-water, is so small as to evade detection by chemical methods, or the influence of a filtration, which effects the destruction of ordinary organic matter, leaves the specific poison unaffected and in full potency. So well are these facts recognized and acknowledged, that the health officers of many cities having a trustworthy general supply, have not hesitated to close up the wells within their jurisdiction.

(To be continued.)

HOUSE AND YARD VENTILATION.*

BY W. C. VAN BIBBER, M.D., OF BALTIMORE, MARYLAND.

Much has been written and published about house ventilation for both city and country dwellings, yet comparatively little has been said about the ventilation of back yards, and premises, and alleys.

If ventilation means "to open or expose to the free passage of the air or wind; to cause air to pass through;" then it is plain when it is intended to accomplish a proper ventilation for the purposes of health, the foul or damaged air in a house must be replaced by pure air. In the cities and towns throughout our country, as things now exist, it is a problem where to obtain this pure and fresh air. The yards, premises and back alleys around the houses, are not now attended to as they should be to effect this purpose.

I am personally quite familiar with this subject in many of the cities, towns and villages in the States of Pennsylvania, Maryland, Virginia, New York, Canada, Ohio, Louisiana and Mississippi. The yards attached to houses, are, for the most part, from fifty to one hundred and fifty feet deep, more or less, and are generally surrounded with decaying board fences, from six to eight feet high; and these yards have been, as a rule, the receptacles for all thrown-away matters of a family for a long time. The exhalations from such yards are bad, and if an atmosphere, laden with these impure emanations, should be introduced into a cleanly house, the effect must be injurious. It is generally believed that the filth-pestilences—those diseases caused by micro-

organisms—are brought about in this way. Thus it will readily be seen that whilst making provisions for ventilating the houses, if the yards, premises and alleys are neglected, matters may be made worse, and thus ventilation be deprived of all its benefits.

In a report made to the Maryland State Board of Health, in 1878, I said, “Encamped upon an eminence in the State of Mississippi, I once beheld a beautiful village, situated in a plain, upon the south bank of a gracefully sweeping bayou. Cluster roses and creeping plants and flowers completely covered the roofs of the houses, so that, in the early dawn, it looked like a fairy city of enchantment. Who would have supposed it was so fair without, and yet so foul within? Its high, board-screened, undrained, level and water soaked yards, were filled with rubbish, dirt, and things offensive and useless, which sheer carelessness had allowed to accumulate, and a filth-pestilence was even then rapidly filling its cemetery. This town was Port Gibson, the capital of Claibourne county, Miss; and I have seen many such towns, similarly built and fashioned, in all States which have been mentioned. Indeed, it is well known that cities and towns having such yards as described, are not only found in all the other states in our union, but also in every other country on the earth. The older the towns and the warmer the climates, the worse these nuisances.

It may not be polite to criticise our hosts, and those who entertain us so agreeably, but yet if done in the way of public spirit it may be excusable and even considered a kindness. Go into the back rooms of many of the houses in this city on a sultry summer's day, and then tell me where the pure air required for a proper ventilation can be found.

Obstructions to the free circulation of the air, in the form of houses, large and small, constitute cities; and, of course, must necessarily exist wherever a city is built. But the high, tightly closed yard fences, which effectually obstruct surface ventilation, form alleys, and hide such an abundance of filth, may soon, I trust, be done away with forever. The curb-stone, a flower-bed, an iron railing, or a slatted wooden fence, may be most advantageously substituted for them. Beauty, cleanliness, healthfulness and security to property, will be increased by the removal of these close fitting yard fences.

This is certainly a most important matter, and a needed improvement; because the many small yards, thus fenced off, make an immense aggregate surface. If the curbstone can be made, by statute law, an equal protection to the lock upon a high board fence, being lighter and hence more secure, as well as more cleanly and beautiful than the old fashion of which we now complain, then the open yard system will prevail, and soon be brought into popular favor. Already in this city, Philadelphia, several public spirited and distinguished citizens, notably Mr. Joseph Harrison, have erected elegant and commanding rows of houses and adorned the yards in the rear with beautiful gardens without the obstructing partitions. Two instances to illustrate this improvement may also be cited from the city where I live (Baltimore). Upon the grounds where the Johns Hopkins University now stands, there were formerly many houses, and all the yards were enclosed with the conventional eight-foot-boardings. The enlightened president and trustees of this advanced institution, among the many other benefits they have conferred, have removed these fences and substituted curbing and flower-beds. The secretary of the Maryland Board of

Health, Dr. Chancellor, has made a similar improvement for the yard of his dwelling.

Many other examples could be given from other cities and towns north and west, or throughout the country generally. The object of this paper is to call the attention of this Convention to the importance of these examples, and to encourage the enactment of statutes which will foster and compel such an improvement. If the citizens of Philadelphia, Harrisburg, Lancaster, York, Pittsburg, and the hundreds of smaller towns throughout the Keystone State, will seriously and industriously combine to alter this old-fashioned nuisance in the building of their towns, I can think of *no one thing* which would be likely to add more to the general healthfulness and pleasure and domestic pride within their State. Besides removing thousands of ugly obstructions to the wind, blowing over a naturally healthy soil, the children of future family generations would hereafter vie with each other, and with their neighbors, in planting a flower or a tree to adorn those premises into which their parents, by pulling down these fences, had already allowed the winds to enter and the light to shine.

THE SANITARIAN AT THE BREAK-FAST TABLE.

Do you then really believe that if the laws of hygiene were rigidly observed there would be no disease to afflict humanity? Thus spoke the skeptic, after I had been arguing for a long time the benefits that mankind would derive from a practice of the teachings of hygiene. Do you think, I replied, asking a counter-question by way of answer; do you think that if the whole world went to church there would be no sin? The teachings of religion are antagonistic to sin, yet sin

to-day is even more prevalent than disease, but as religion gains a hold on a community the greater crimes, the more grievous sins become less common; and so also as hygiene becomes known and respected the great plagues, the terrible devastations, the physical scourges of humanity disappear. If you want me simply to answer your question in the abstract, without the qualifying statements that are always necessary in formulating an answer to a question of broad dimensions, then I would say yes. Yes, yes indeed, if all the teachings of hygiene were rigidly observed, disease would be unheard of, even our largest dictionaries would ultimately discard the word because there never would be any occasion to use it. This, I would say, as I have said, must be a broad answer to a broad question. Now I know that you will ask me whether I honestly believe that such a millenium will ever be attained and I anticipate your question by answering most emphatically no. Just as religion aims at the moral perfection of the individual, so does hygiene aim at his physical perfection and we have no more reason to hope or expect that the one will become a reality than that we will be blessed by the beatific spectacle of the other. No indeed, my dear Skeptic, disease will never be driven from this planet; it will always walk hand-in-hand with our dearest hopes and pleasures, it will be ever ready to darken the joy that the little toddling feet and prattling voice has brought to our fireside; when after you have enjoyed the imaginary pleasures of masculine liberty until a small bald spot commences to appear on your cranium and you discover some fine morning that your hair is not quite so black as it used to be and that an almost imperceptible little wrinkle is forming at the outer corner of your eye; when then, my friend, Mr. Oldbeaux,

you have concluded that after all, the world to a lonely man is but a hollow, empty affair, and you take unto yourself a partner, so charming, so delicately sympathetic with your somewhat set and not always reasonable ways, so ready to enter joyfully into all your sunshiny pleasures, and so pathetically consoling in your periods of cloudy and gloomy despondency, when you are forced to wonder how you could have been so long such a confounded old fool as to imagine that bachelorhood was a divine institution; when you fondly imagine that you have at last really begun to taste the rapturous joyousness of an approach to a future life of perfection, then when you feel that life is truly bliss and that your fondest dreamings could never have pictured a more perfect state, then I say, just as surely as in by-gone times, when the black plague and small-pox swept over an unprotected community, then, I say, just as surely will iconoclastic disease steal in at your closed door and remorselessly rob you of the central figure of this domestic utopia, throwing you helplessly and I might say hopelessly back into that chasm of lonely nothingness from which you have but so recently emerged a truly, thoroughly happy man.

Yes, I mean *iconoclastic*, because in reality you have brought this affliction on yourself; not, strictly speaking, as an individual, because you have of course been as careful to avoid the causes of disease as any one could be; old bachelors are always particular about their health; every one must nurse something; it is an inclination implanted in our very natures. The young mother nurses her baby, the merchant nurses his business, the author his books, the husband his wife, and the epicure his gout; but the bachelor (particularly if he be well provided with the root of all evil) can have none of these

(save the gout as he advances in years,) and as he must necessarily nurse something from the instinct born in him, he falls to and nurses his health. Who ever saw a single man of more than thirty years of age, who was not, (possibly unconsciously to himself), but for all that, who was not a sanitarian, so far as he himself was concerned. He cannot be hurried at his meals; he must have his full quota of sleep; his room must be large and well ventilated; his morning visit to the water-closet is religiously paid; comfort rather than fashion will dictate the shape and size of his shoes; in a word, in a thousand and one small ways, (oftentimes unrecognized by himself), he plainly shows that the time has come when he thoroughly realizes the truth of the old saying that at thirty a man is either his own physician or a fool. Having only himself to consult, he has made a thorough study of himself and he knows his lesson well. Therefore, I say *iconoclastic* disease—excuse me; Mary, you will never make that fire burn more brightly unless you go about it in a more rational way. I have been watching you ever since I came down stairs, and I can no longer hold my tongue. You shovel on the coal, put up the blower, the fire burns up a little, off comes the blower and down goes the fire. You remind me of the man (or I might say men and women too) who eat, and eat, and eat; never think whether their bowels are moved or not and when they feel badly, when their vital spark is low, take a *nip* of whisky to spur them on; they derive temporary benefit, just as your fire does from the blower, but their vital force is getting weaker and weaker, just as your fire gets lower and lower and both will finally fade away. The man cannot be well unless he systematically removes his ashes, and your fire cannot burn well unless you regularly rake it. But, bless

me, it is nine o'clock and I have some very sick patients to see. To-morrow morning, I will come down early, Mary, and show you how to make a good fire, for a stove and a human being are made very much on the same plan, (if you will excuse the vulgar comparison) and the life of a man and the life of a stove have several of the same ends in common and must be managed very much in the same way in order that the ends may be accomplished.

(To be continued.)

WOMAN'S DRESS REFORM.

In connection with our remarks on this subject, in our issue for January, the following correspondence of Olive Logan to *The Philadelphia Press* may prove of interest.

The rising star of the feminine firmament is Mrs. Jenness Miller, the beautiful young advocate of hygienic clothing. Mrs. Miller has just left Washington for New York, where she gives her lecture under distinguished auspices, thence proceeding to Chicago and other points West. The title of her discourse is in itself striking: "Some Reason why Women of To-day are less Beautiful than Mother Eve." I spent an hour or two the other day with this new light, and was greatly impressed with her in every way. She lives on Connecticut Avenue, opposite the British Minister's. Every evidence that a cultivated taste can give is shown in the charming nest. Her husband is a retired dry goods merchant, who came to Washington last September, but he is now tired of doing nothing and will return to business in New York. Mrs. Jenness Miller is fortunate in having a husband who admires her reform in dress to such an extent that he thinks all women look "perfectly hideous" beside her. And he is right; they do. Her form is exactly like that of Power's Greek Slave. In features she resembles Mary Anderson, for whom she has often been mistaken. She has the deep sonorous voice of Mary Anderson, too, and this and all her other

good points she attributes to her obedience to the laws of hygiene.

* * * * *

In writing for so large an audience as *The Press* addresses it is difficult to describe minutely the various innovations on established female attire which Mrs. Miller has made, and which she insists are necessary to health. But let me frankly say she discards that time-honored garment which has the French name; and also, that she wears the breeches. So do all women, really; only theirs are trumpery little things not worth speaking of. Mrs. Miller's trousers are sensible, serviceable garments, but they are very retiring. They do not descend below the ankle. She wears no petticoat, that other time-honored garment which has become synonymous for its wearer, so thoroughly is it identified with woman. Mrs. Miller's gown is all in one piece, the skirt attached to the body; its weight depends from the shoulders; therefore the tender organs of lungs, heart and stomach are subjected to no pressure. What a boon to suffering womankind it would be could this change in female attire become thoroughly engrained in the habits of the sex.

* * * * *

Mrs. Miller differs from all previous female dress reformers in that she advocates the richest apparel that money can buy, if one possess the wherewithal to obtain it. Her husband, being in the dry goods business, would naturally forbid her taking the sackcloth and ashes view of the wardrobe question. But she wages a bitter war against corsets! And oh, how it makes a steel-stayed, tied-backed woman sigh with envy to see this agile young creature perform severe gymnastic exercises in a splendid gown made for wearing to a ball. We talk about the absurdity of the little feet of the Chinese women; but after all, deformed feet do not ruin any vital organ. Deformed lungs kill in time. "You have a beautiful figure," said I to Mrs. Miller. "That is only because I am a natural woman," she replied. "You are slender now," I insisted, "wait till you get a hundred pounds more flesh." I shall than have a hundred pounds more sense," she answered quickly. "I wouldn't wear stays if I weighed a ton." OLIVE LOGAN.

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Editorial.

THE EXECUTIVE MANSION.

It is with real pleasure that we are, this month, enabled to lay before our readers positive proof of the prediction which we ventured in our last issue in reference to the sanitary condition of the executive mansion at Harrisburg. It is but an additional evidence of the position we have always held that hygiene is a science, as distinguished from *curative* medicine, which certainly is not. Two and two make four, and with equal certainty can we say that, given a history of disease, such as this mansion presented, some sanitary defects *must* exist. They may not be so very obvious, and many plumbers may pass them by unnoticed, as in this instance. But we must remember that a plumber is not, necessarily, a sanitarian. Druggists are educated to compound prescriptions, not to prescribe them, this being the duty of the physician who has made the special study of the influence of drugs upon diseased conditions. So is it with the

plumber; he has been educated to do the *mechanical* work of plumbing. He has not been instructed in the refinements, so to speak, of sanitary science, and he who trusts to his plumber for an opinion on the sanitary condition of his home, must be nearly related to the man who calls in the druggist from the corner to treat his wife who is ill with typhoid fever. To whom, then, shall we look for the reliable opinion about the sanitary condition of our homes. To that small but growing class, who are making a special study of sanitary science; to that man who by careful and thorough reading of sanitary literature, has ready at his command an intimate knowledge of *all* the sanitary defects that may exist about a house. Such a man knows what to look for and where to look for it; the plumber certainly does not. If he finds a trap where he has been told it ought to be, he pronounces every thing "*all right*;" in fact we will wager that there are many plumbers who cannot tell the use of and do not know the necessity of traps, this simple element of sanitary science. What we mean is two-fold; in the first place, we mean that it is the duty of every physician to acquaint himself thoroughly with *all* the points of hygiene, that he may be prepared to give a reliable and valuable opinion about the sanitary condition of houses; for it is, naturally, to the physician that a person *ought* to turn for this opinion; and, secondly, we mean that he who *blindly* accepts his plumber's verdict is, to put it mildly, a very *blind* and a very foolish person, who will, in many instances, have sad cause to regret his misplaced confidence.

There is one point in this report with which we feel compelled to take issue. We cannot endorse the recommendation to substitute *terra cotta* pipes for the brick drain under the mansion. If our readers will remember the experience of Dr. Risley

(as detailed in our last issue) they will be prepared to agree with us, when we say that *terra cotta* should never be used as a conveyor of sewage. It is too brittle and is liable to break. We would decidedly give the preference to *wrought* iron, with the sections securely *bolted* together. The objection has been raised that the sewage would corrode the iron, eat through it and cause leakage. If the pipes were of any degree of thickness, we imagine that this would be an extremely remote possibility, and it could be absolutely prevented by the use of wrought iron pipes, lined with a coating of glass, *terra cotta*, or some similar material. This would be more expensive, we admit, than the use of ordinary *terra cotta* pipes; but the additional expense would not, we imagine, equal the cost of a funeral or two.

THE SANITARIAN AT THE BREAK-FAST TABLE.

We present in this issue the rambling conversation of an enthusiast on the subject of hygiene, who never misses an opportunity to impress upon those about him the great good to be derived from an observance of its teachings. We know that he will continue to talk until he has covered the whole field, and as we like his clear and forcible way of presenting the subject, we will continue to listen and will regularly publish, from month to month, a few pages of his conversation.

SPECIAL OFFER.

To subscribers, who will send us a new name, with three dollars (\$3.00) to pay for the back numbers from last July, and for the year 1887, we will send (to the old subscriber and to the new one also) a case in which to preserve the journal, and in which the volume can be finally bound, if it is so desired.

Notes and Comments.

TORTURE FOR FASHION.

AGONY SUFFERED BY SOCIETY WOMEN FOR THE SAKE OF SMALL FEET.

(We take the following interesting remarks from the *Phila. Press.*)

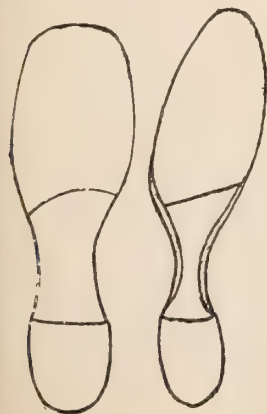
The marble young women who have been left as a legacy to the modern world of art by our Grecian and Roman forefathers and considered to be ideal specimens of feminine beauty—feature and figure—are not noted for small feet according to the proportions of their stone limbs. Nor are their toes doubled up in a bunch, as a well known boot and shoe maker of this city insists is the case with nine-tenths of the fashionable beauties of Philadelphia, or, better, of the present Nineteenth Century. The dames of the ancient world wore sandals.

Of course, the criticising Crispin was referring to the civilized white races of women who wear French-heel shoes, and did not include in his sweeping generality the ebony beauties that Ryder Haggard declares exist in the central regions of Africa, nor the chocolate-tinted Venuses beloved by the many rajahs of India's empire. Doubtless by "world" he meant the women of his immediate sphere—the daintily shod angels of Philadelphia, the fame of whose beauty has traversed the breadth of the globe, and perhaps a little gossip about the boots, shoes, *bottes* and *bottines* worn by the fair dames of this our city gleaned from the above-mentioned Crispin may be of current interest even if introduced by the following cut, illustrating his reference to doubled-up toes:

"Women have a perfect craze for small feet," said he after a plaster cast had been gazed at with mingled emotions by a newspaper man who had just purchased a



The craze for small feet. enough for Dame Nature, why they should not be good enough for women I don't know. Now, I serve thousands of women with foot wear, and I can just count on my fingers the number of my female customers who have sufficient common sense, let alone courage, to cover their feet with shoes of a size not calculated to deform their feet, or, at least, not likely to give them pain or cause them premature fatigue when walking. Very few women really can wear smaller shoes than from what we call 4s to 5s. There are, of course, some little women who can get into 2s and 3s with comfort; but I am speaking of the woman of average height and limb. Extremes of stature, both tall and short, are met with emergency sizes, and we have in stock women's shoes running from 1s to 8s. In case of one of the midgets or elephantine-footed girls from the freak museums coming here for shoes we should have to make to order, of course.



pair of wide-soled, low-heel lace-ups and somehow struck up conversation with the personage who owned the store. "Yes, sir, a complete craze. If feet of a certain size and shape are good

"Now here is a last of the present fashionable pointed toe, narrow soled shoe and another last of common-sense sole, which I place side by side, thus. Take a good look at them and then

you will see how gradually the narrow-pointed shoe causes the double-up toes of the casts I just showed you."

"Yes, but there are plenty of girls and women who wear such pointed shoes, and I am sure that they do not suffer."

"Ah, but they did. They have got used to it, just as the Chinese woman gets used to the agony of her pedal deformity. There is hardly a woman in the city who does not disguise the number she wears for shoes as carefully as, sooner or later, she disguises the years of her age; they always go back a size. Putting aside the cramping of the toes, however, Philadelphia women have naturally small feet; that is, smaller than their sisters in many other states. New York women come close to them with New Jersey thrown in; but when you get to Baltimore and journey South, you find women's feet grow smaller and altogether of a different shape to Northern women's lower extremities. In New Orleans, Louisville, Memphis, Atlanta and in a dozen more southern centres it would be impossible to sell the stock of a Philadelphia or New York shoemaker. The Dixie land belles have very high insteps for one thing, and the soles of their feet are very narrow.

"On the other hand, when you go West the size and shape again alters from the Eastern foot, and becomes wider and much larger, the climax being reached in Chicago, where the average shoe sold is from 7 to 9. Come here a minute."

At the end of a bench a comely looking but vain woman was sitting, earnestly



endeavoring to get her huge foot into a satin slipper three or four sizes too small for her. Finally, after trying from fours up, she went away with

a pair of seven and a half. "Her right size is about eight," remarked the shoemaker, shutting up his money drawer after making change.

ABOUT SHINY SHOES.

"I suppose you know that shiny shoes were at one time considered a mark of gross effeminacy," he continued, taking down a beautiful pair of masculine pumps. "Nowadays a man of fashion would as soon be seen without his coat as unattired in a pair of glittering patent leathers.

"I see you use boots and shoes as synonyms. They were not always the same?"

"Why, no; nor for that matter are they still. A shoe, strictly speaking, is low cut and a boot above the ankle. All boots, perhaps, can be termed shoes, but all shoes are not boots. For instance, you would hardly call a cavalry man's 'Wellingtons' 'shoes.' Now, this is a shoe," handing the newspaper man a pretty conception in bronze with open-work lacing and silk ties—"charming, is it not?—French manufacture. They make the prettiest shoes in the world in France, but the most durable in America. It is astonishing how much this great country still imports, and I often wonder how long we shall continue to do so.



Would you believe
That so much scarf of France, of hat, and
feather,
And shoe, and tie, and garter, should come
hither?

"You catch me again quoting, eh! Now this is a bride's shoe," holding up a pretty combination of embroidered kid and soft leather. "It is part of the trousseau of a young lady



whose husband intends to take her on a bridal trip to Italy, and I judge these pretty shoes are for the honeymoon days on board the steamer. I suppose you know the throwing of a shoe after a bride is a symbol of the renunciation of dominion and authority over her by her father and guardian, and the supposed receipt of the shoe by the bridegroom is an omen that authority is transferred to him. By the way, don't go away under the idea that only women are particular about the size and shape of their shoes, as gentlemen share that vanity largely. Men are not as liable to wear shoes too small for them as women, but they will take a lot of squeezing for the sake of keeping inside a shoe that takes their particular fancy. Indeed, it was the French fops of the Quatorze and Quinze era in France who started the injurious custom of high-heel shoes, the most clinging fashion that has ever existed, for it has not been killed through two successive centuries. The worst offenders are the young men whom you newspaper fellows describe as 'dudes,' and their high heels are largely the cause of the spindle shanks so many society men exhibit. A broad, low heel, should be adopted by everybody.

SOME CHOLERA STATISTICS.

The municipality of Marseilles has issued statistics concerning the second and last cholera epidemic which are not without interest. The number of deaths from cholera in 1884 amounted to 1871, or 4.94 per 1000 of the population. In 1885 the epidemic was not so severe; there were 1216 deaths, or 3.49 per 1000 inhabitants. During the course of the latter year the municipality organized twelve ambulances in different parts of the town, where assistance could be obtained at all times of the day and night.

In this the authorities were supported by a staff of 102 doctors, 28 medical students, and 87 dispensing chemists. The total number of patients treated by the members of this service amounted to 2017, of whom 1513 were suffering from cholera. Of the remaining 504, the greater number were suffering from typhoid fever; then came, in order of frequency, cases of hemorrhages, nervous complaints, pulmonary affections, wounds from accidents, and, above all, derangements of the digestive organs and a few cases of manifest drunkenness. Taking the cholera cases only, the males numbered 871 and the females 607. In 35 instances the sex was not indicated. The proportion is analogous to that noticed in 1884. The ages are given in all excepting 169 cases, and we find the division to be as follows: From the period of birth to the age of twenty there were 223 cases of cholera; from the ages of twenty to fifty there were 813 cases, and only 129 from fifty upwards; under the age of ten there were only 53 cases. It appears, therefore, that cholera proves most fatal in the prime of life. The nationality of 1438 patients was ascertained. There were 1081 French subjects, 272 Italians, and 85 persons belonging to various other nationalities. This shows a very great increase in the foreign elements, and helps to confirm the theory that the crowding together of the poor Italian laborers who flock to Marseilles is one of the most evident causes of insalubrity. During the epidemic of 1884, in the single district of the Bourse, out of 694 cholera patients no less than 242 were Italians. The statistics with regard to the professions of the sufferers unfortunately only refer to 798 patients. By far the greater proportion were unskilled dock laborers or navvies; these numbered 376. After this 94 cases are entered as without profession, 57 as domestic

servants, 44 as charwomen, 28 sailors, 25 clerks or shop assistants, and smaller numbers as belonging to various other callings. From these statistics, though referring to only 798 out of the 1513 cases treated, it seems fairly demonstrated that those who came specially in contact with the cholera did not suffer conspicuously more than the rest of the population. But the men who were employed to bury the dead, to disinfect the houses, and to clean the sewers, and the whole of the medical and nursing staff, enjoyed remarkable immunity. It may be added, in conclusion, that the entire cost of the twelve ambulances and hospitals which supplied medical assistance to the 1513 cases amounted to \$8000. For medicine and medical advice the actual outlay did not surpass the average sum of \$3.25 each case; but much gratuitous advice was given to the poor.

THE PUBLIC HEALTH OF GREAT BRITAIN IN 1886.

Following closely upon the detailed Annual Report for 1885, the Registrar-General has just issued, in his quarterly return for the three months ending with December last, a summary of the national vital statistics for 1886, says *The Lancet*. The birth-rate of England and Wales was last year equal to 324 per 1000 of the estimated population, and no less than 20 below the mean annual rate in the preceding ten years; it was lower than in any year since 1848, when the registration of births is known to have been very incomplete. The death-rate of the year, notwithstanding the exceptionally trying weather in the first quarter, and a more than average warm summer that caused excessive mortality from infantile diarrhoea, was so low as 19.3 per 1000, corresponding with the mean annual rate in the preceding five years. Thus the mean

death-rate in the first six years of the current decennium (1881-90) was equal to 19.3, and 2.1 below the mean-rate in the preceding ten years 1871-80. The Registrar-General points out that this remarkable decline in the death-rate "implies that more than 339,000 persons in England and Wales were alive at the end of the six years (1881-86) whose deaths would have been recorded had the mean-rate of mortality equaled that which had prevailed throughout the preceding ten years." Nearly half this reduction in the death-rate in recent years was due to decreased zymotic mortality, for it appears that the death-rate from the principal zymotic diseases, which was equal to 4.15 per 1000 respectively in the two decennial periods 1862-70 and 1871-80, further fell to 2.43 in the six years 1881-6. Compared with those recorded in 1886, the deaths from diarrhoea last year showed a considerable increase, and those from "fever" were rather more numerous, whereas those referred to each of the other zymotic diseases showed a decline. The death-rate from scarlet fever was considerably lower in 1886 than in any previous year on record, and has fallen year by year since 1878. Fever (typhus, enteric, or simple) mortality has been equal to an annual rate of 0.26 per 1000 in the past six years, whereas the rates in the preceding three decennial periods were 0.91, 0.89, and 0.50 respectively. Only 284 fatal cases of small-pox were reported in England and Wales in 1886; the nearest approach to so low a number, recorded in any previous year since civil registration commenced, was 536 in 1879. On the whole, this brief summary of the vital statistics of 1886 supplies a measure of public health during last year which is full of the strongest encouragement to sanitary effort, of which the present satisfactory bulletin is undoubtedly the result.

A NEW METHOD OF SEWER VENTILATION.

A new proposal has just been brought forward for the ventilation of sewers. It has the merit of originality and ingenuity. Mr. R. S. Ash (says the *Lancet*), has patented a system of ventilation by the force of concussions resulting from explosions automatically produced. In the man-hole of a sewer, or in the ventilating-shaft of a coal-mine, etc., he places a small cylinder where coal gas accumulates till it reaches a little hole, and there comes in contact with a jet burning outside. An explosion results and the lid of the cylinder is blown off, but counter-weights make it fall back in its place, so that all is ready again for the next explosion. Of course the air is blown out of the manhole and a vacuum created and filled by the air rushing up from the sewer, but this displacement is not the principal merit of the process. A ventilating fan or revolving wheel and a furnace will equally produce a current of air; but such current generally travels down the central and main sewers, and leaves almost untouched the accumulations of foul gas in the branch sewers, in the angles, and in other inaccessible places. A shock, however, does not travel in a straight line, but spreads out in a circle. A stone thrown into a pool of water affords the readiest illustration of this fact. Let the edges of the pond be jagged and angular, the ripple will travel up every little crevice or opening in the banks. A current, on the other hand, even the current of a rapid stream, leaves quiet nooks made by the recesses of the embankment, where a boat may be safely moored without risk of its being borne away. Thus, an explosion in a sewer will with more certainty move the air in the branch sewers and out-of-the-way passages than will a strong current down the main

channel. Also it should be noted that it is precisely these branch pipes and sewers which are nearest to the inside of the dwelling, and therefore most urgently need ventilation. Consequently, if ventilation by concussion or explosion can be made to act without involving too great an inconvenience and expense, it is likely to prove as valuable a progress in practice as it is an advance in theory.

SUICIDES OF CHILDREN.

We have no means of knowing whether suicides among children are proportionally more numerous within the last few years than they were previously. Attention has been specially directed to these most lamentable occurrences recently, and this may account for the fact that an increased number of cases are from time to time under notice. There is something especially distressing in the fact that consciousness may be, and often is, so painfully influenced by circumstances in the early stages of life that death is sought as a relief from misery. We do not think that a man or woman must needs be insane to seek death as an escape from trouble. It seems to us that well within the limits of sanity a perverse, or morally cowardly, or very much worried consciousness may reason out the proposition that life is not worth living, and conclude to die. Precisely the same processes which go on in the mind of an adult may be in operation in the mind of a child. There is, in short, no reason why the young should not commit suicide as well as the old, if only hope—which in a very practical way may be said to be an essential of life—is crushed out of existence. The mind in which hope dies may court death, and yet be in no sense *morbid*. It is difficult, but it is possible, to slay hope in the life of a child, and when this is accomplished it is not unreasonable to suppose

that despair may end in self-slaughter. The intense haste of life and enterprise is doubtless one of the causes of suicide, and there can be no question that our system of forced education, and the premature imposition of hideous brain-tasks on the young, press heavily on the consciousness. We venture to think this subject of suicides among children is one which ought to be taken into very serious consideration by those who are responsible for the operation of laws which may ultimately render the population more erudite, but which will not, unless greatly modified, make them happier, or in a social sense more prosperous, than heretofore.

INFECTION AND DISINFECTION.

Much harm has undoubtedly been caused by the implicit belief the general public place in the many disinfectants which are now advertised, and we can sympathize with the efforts which Dr. Robson Rocse has made to correct some of the erroneous opinions which are held as to their utility. Disinfectants have, in great part, replaced the "charms and philtres" of past ages; but for many it may be said that these "vain chemical libations," as Dr. John Simon designates them, are of no more value than the supposed means of protection against infectious disease, whose place they have taken. In an article Dr. Roose has contributed to the February number of the *Fortnightly Review*, he points out that deodorization and disinfection have nothing in common; that disinfection must be capable of preventing the development of a living virus which is given off by persons suffering from infectious disease, and which would otherwise possess the power of multiplying in some other susceptible persons with whom it may come in contact. The mere creation of an odor which overpowers some other odor, or the use of a

material which only retards decomposition, has no claim to be trusted to destroy or modify the virus of infective diseases. The writer endeavors to enforce his argument by explaining the nature of the material upon which the disinfectant is required to act, and to make clear what is meant by infective processes. It may be hoped that some good will come by the publication in a widely-read periodical of an article which protests against too much reliance being placed upon so-called disinfectants. The large sums of money which are now spent annually upon worthless chemical agents, and the neglect of proper precautions which are allowed to be superseded by them, is matter for serious regret. To some of Dr. Roose's statements we might, perhaps, take exception; but they do not affect the main argument of his paper, which we trust will be taken to heart by its many readers.

A CENTENARIAN.

THE OLDEST SUBJECT OF THE EMPEROR OF AUSTRIA, AGED 112.

Magdalene Ponza, the oldest of the Emperor Francis Joseph's subjects, who entered her 112th year on Christmas Eve, has been interviewed by the Vienna correspondent of the London *Times*. She was born at Wittingau, Bohemia, in 1775, when Maria Theresa sat on the Austrian throne. Magdalene Ponza retains full possession of her mental faculties. Unfortunately she can only speak the Czech language, and she can neither read nor write. However, she answers questions briskly enough through the youngest of her surviving grandchildren, herself a woman of 60. Magdalene Ponza's age is authenticated by the out-door relief certificate of the Viennese municipality, which, with magnificent generosity, allows her four florins and forty kreutzers—about

6s. 6d.—a month. The venerable dame lost the last of her teeth thirty years ago, but she has an excellent appetite, eats meats minced, drinks a little beer daily and hobbles about her room without much difficulty with the help of a stick. Sixty years of her life were spent in her native village, more than thirty years in another village, and she was past ninety when she came to Vienna, seventeen years ago. All the doctors who have seen her pronounce her to be one of the most extraordinary cases of longevity on record, for she complains of no ailments beyond a slight asthma. Her worn face, with its countless wrinkles, does, however, look preternaturally old. Giving the correspondent her photograph, Magdalene Ponza, scored her mark on it with a fair steady hand, and remarked with a smile that her first portrait was taken by a painter in her village ninety years ago. This was before the German Emperor was born. The centenarian has received a good many visits and presents since her last birthday, but one must regret that more has not been done for her through official channels. She shares one single poor room with her granddaughter and the latter's husband, who is bedridden with a spinal complaint. A woman who is perhaps the *doyenne* of all the women in Europe, and who has lived under six Austrian sovereigns, deserves at least that her closing days should be spent in comfort.

BOSTON VITAL STATISTICS.

The Boston Board of Health, through its chairman, Samuel H. Durgin, M. D., publishes the following summary of deaths in Boston, with principal causes, for the year 1886, compared with those for 1885, the whole population in each year being 400,000:

	1886	1885
Total No. of deaths from all causes	9,268	9,618

Annual death rate per 1000 inhabitants,	1886	1885
Total No. from Zymotic diseases,	23.17	24.04
Percentage of deaths from Zymotic diseases to total mortality,	1,644	1,879
Total No. of Stillbirths,	17.73	19.53
Total deaths of children under 1 year,	543	520
Under 2 years,	2,110	2,156
Under 5 years,	2,610	2,812
Percentage of deaths under 5 years to total mortality,	3,186	3,465
Total No. of deaths from diarrhoeal diseases under 5 years,	34.37	36.03
Total No. of deaths from diarrhoeal diseases, all ages,	605	621
Percentage of deaths from diarrhoeal diseases to total mortality,	705	723
Alcoholism,	7.60	7.15
Croup,	39	55
Carbuncle,	94	125
Choiera Morbus,	3	7
Cholera Infantum,	28	30
Cerebro Spinal Meningitis,	444	461
Diarrhoea,	14	19
Dysentery,	172	170
Diphtheria,	61	62
Erysipelas,	326	334
Intermittent Fever,	39	40
Measles,	—	3
Purpura,	36	84
Puerperal Fever,	7	2
Pyæmia,	17	20
Remittent Fever,	17	11
Rheumatism,	5	2
Scarlatina,	28	30
Small Pox,	—	156
Syphilis, (congenital)	—	2
Syphilis,	20	21
Septicæmia,	7	10
Tonsillitis,	26	31
Typhoid Fever,	4	5
Typhus Fever,	135	153
Whooping Cough,	—	—
Yellow Fever,	37	26
Other Zymotic diseases,	—	1
Cancer,	1	11
Phthisis Pulmonalis,	299	274
Bright's Disease,	1,607	1,523
Bronchitis,	127	187
Heart Disease,	420	487
Pneumonia,	581	562
Old Age,	778	963
Violent Deaths,	268	268
	361	350

SWISS CONDENSED MILK.

The chief seat of this now important industry is the village of Cham, situated on the Lorze, a few miles from the lake of Zug. The chief factory there, which is the principal, all belonging to a wealthy company, concentrates daily about 60,000 litres of milk, the produce of more

than 8,000 cows, and sends out from 15 to 17 millions of tins of preserved milk annually.

The company collects the milk from the farmers of the neighborhood, and pay 12 centimes per litre for it. On reaching the factory, the milk is poured through a silk*filter into a large reservoir. In the reservoir it is automatically weighed and then drawn off in large copper boilers, and is heated to about 35° C. by steam. To the milk one-eighth of its weight of cane sugar is added, and when this is dissolved another automatic action carries it into vacuum pans in which it is concentrated by boiling at a temperature of 52° C. Under these conditions the constituent elements of the milk (fat, caseine, etc.) are unaffected. The milk is reduced to one-third of its volume after three hours in the vacuum boilers, and at that time it is of the consistence of a thick syrup. It is passed into great cylinders, which are kept constantly plunging into running water, and by this means it is rapidly cooled. It is then conveyed to the upper floors and poured into the metal boxes ready for it, which are immediately soldered down and packed for delivery. The vessel in which it is carried are washed, brushed and steamed before being re-employed.

The whole of the work is accomplished by machinery, from the cutting up of the plates of tin to the soldering of the cans. So perfect are the tools that one skilled workman can solder 4,000 tins in his day of ten hours.

STOMACH AFFECTIONS AMONGST SWEDISH PEASANTS.

Dr. Wiesener mentions in the *Medicinsk Revue* that in part of Sweden stomach affections are very common. These he comprises under the general term "cardialgia." They include, however, chronic

gastritis, dyspepsia, ulcer of the stomach, dilatation of the stomach, nervous cardialgia, and carcinoma. The first two of these are less common than the others. The main causes are to be found in overwork and injudicious diet—the usual lot of the poorer inhabitants. It is not that their food is actually insufficient, but it contains too little nitrogenous matter and too much carbo-hydrate, vegetable albumen taking the place of animal albumen, and quantity being substituted for quality, which impedes the mechanical and chemical processes of the stomach. Again, such meat and fish as the peasants do eat is usually salt, and their milk is sour; indeed, the fish is often in a partly decomposed condition, containing ptomaines. The porridge too, which in many places forms the staple of the peasant's dietary, is frequently insufficiently cooked, so that the starch is unchanged in the alimentary canal. These diseases are seldom met with until after the age at which young people take part in heavy out-door work. As to treatment, both of a prophylactic and curative character, Dr. Wiesener recommends more rest, attention to cleanliness (which is sadly wanting in the culinary operations), more fresh meat and vegetables, and an improved method of preserving milk, &c. As to drugs, alkalies, hydrochloric acid, bismuth, magnesia, and carbolic acid may be found useful according to circumstances.

POISONING BY HERRING-ROE.

In the *France Medicale* a case is related in which a man was poisoned by eating three hard-roë herrings. The symptoms were a feeling of oppression, vomiting, burning sensation in the throat and stomach, very violent abdominal pains, and dysentery. The attack lasted about forty-eight hours, and could be traced only to the herrings. Cases of this

kind are by no means rare. It has long been known that caviare (sturgeon-roë) and the ova of pike, barbed, perch and other fish, have frequently given rise to symptoms of poisoning in Russia. M. Goertz, a Russian physician, treated three cases of this kind in one family; the patients had eaten hard roë, while the other members of the family who ate the soft roë experienced no inconvenience. Dr. Minchemeier, of Munich, in 1875 reported three cases of poisoning after eating barbed-roë. These cases, which were very severe, were treated with ice and tincture of opium and saffron. Professor Nannyin reported a similar case in Berlin in 1884. Among the numerous cases reported in Russia, herrings appear to have been the cause in only one. According to Huselmann, accidents of this nature, due to caviare of bad quality, are frequent and sometimes fatal among the poorer classes in Russia. It is impossible, according to him, to say exactly what the poisonous element is, and it is useless to hide one's ignorance by attributing all the effects to ptomaines. In these cases, as in poisoning by mussels, oysters and other fish, the idiosyncrasy of the individual must be taken into account.

THE LIFE OF A GREAT JESUIT.

Father Beckx, the great General of the Jesuits, he who was considered, at one time, as second only to the Pope himself in the greatness of his influence in religious circles, died recently in Rome. His life presents some points of interest to Sanitarians, for, not only was he over ninety-two years of age at the time of his death, but he also retained, in a remarkable degree, all his wonderful faculties up to very near the end. Speaking of him a few months ago, a writer says, "He ate temperately of very simple food. He now rises at 8 A. M., and reproaches himself

for such idleness. At 10 he walks in the garden, or receives in his room those priests with whom he is most intimate. At midday he dines, and afterwards sleeps for a couple of hours. At supper he eats very little, and at 8 P. M. he has already retired to bed." Thus, we see that *hard work* did not shorten the life of this hard working man, and we again learn that *hard work* when combined with temperance in all things and an abundance of sleep were the promoters of longevity. It is a fact well worth remembering that it has been frequently said by men of eminence who have reached a good old age, that while they worked hard, yet it was always necessary for them to have lots of sleep. Father Beckx, we see, slept fourteen hours out of the twenty-four; while twelve hours, we learned in our last issue, is devoted to sleep by the octogerarian General Cameron.

THE CORSET CRUSADE.

In a recent number of the *Herald of Health* the corset crusade is presented by a sarcastic writer in a new and interesting light. "The corset," he observes, "is the true badge and mark of aristocratic pride. It announces that the wearer despises labor, and desires it to be known that she does not belong to the working class. As the dwarfed foot is the mark of aristocratic distinction upon one side of the world so is the dwarfed waist a like mark upon the other side, but the distorted waist is the greater evil. The foot is not a vital organ, but the lungs and liver are vital organs. "I am a fine lady, I do not work for a living; I could not work if I tried, for I am tight laced; I can afford it; I belong to the aristocracy." Very well, Madame, or Miss, so long as your money holds out; but permit me to tell you that there are some other things

besides manual labor that you can not do, one at least of which you would be proud to do. In that supreme effort of nature necessary to the creation of human being you are not capable of doing your part, and if you do venture on motherhood it will be at a frightful cost to you and to the innocent creature whom you introduce into this world. Its weakly constitution and your wretched health, perhaps for all your after life, will be due to that barbarous practice which you now think of only as a means of proving that you are a fine lady."

CREMATION IN NEW SOUTH WALES.

The bill introduced by the Hon. Mildred Creed, in the Legislative Council of New South Wales, provides for the establishment of crematoria, and sets out the requirements which the licensed applicants for crematoria must fulfil, and establishes the conditions of cremation. (1) No permit is to be issued by the registrar except upon the receipt of a certificate from a legally qualified practitioner who had been in previous medical attendance for at least four days; (2) a certificate after *post mortem* examination; or (3) a coroner's inquest. Relatives may object to cremation in cases where it is not directed by the deceased himself. No persons having any pecuniary interest will be permitted to give, or join in giving, a certificate under penalty of felony, punishable by penal servitude for a term not exceeding ten years. The bill was introduced in a speech by Mr. Creed, in which he gave a very able summary of the well known hygienic and other arguments in favor of the regulation of cremation, which in the Colonies, as elsewhere in the British Empire, is not an illegal process, but requires legislation for its regulation.

THE HEALTH OF PARIS.

The Paris correspondent of *The Lancet* thus writes: "Hitherto the supply of putrid Seine water in the place of that of the Vanne has not had any appreciable effect upon the mortality. Indeed, the number of deaths from typhoid recorded in the last *Bulletin de Statistique Municipale* was much smaller than usual. It is a matter, however, of common observation that typhoid has increased in frequency, and in the Montparnasse quarter more particularly bowel complaints of an unusual kind are exceedingly prevalent. According to Dr. Roussel, who is well known in England in connection with transfusion, there is an epidemic of hæmorrhagic convulsive enteritis in this district. Whilst passing along the street a few days since he saw a child fall down in a fit and void blood. A summary inquiry elicited the fact that attacks of this kind were quite common amongst the children of the poorer classes, and further investigation showed that they only occurred in the families of those who are supplied with offensively-smelling water. I may mention, as one instance out of many, that several *employés* of a large administration are now absent on account of bowel troubles, and those who are not actually ill are suffering from intestinal irritation."

WHY OUR WOMEN ARE GETTING FAT.

Americans used to be thin and scrawny, observes the Boston *Herald*, and were well laughed at by less nervous nationalities because they were so; now all this is changed, and the typical American is getting to be actually corpulent. What does it mean that our women should suddenly take on fat to this degree? Where are the delicate, fragile types that looked

as though the wind would blow them away? If you will observe the average woman, when in the street or at some place of amusement, the increase of her weight, the size of her generally will be a surprise if you haven't given the subject previously any thought. Once on a time it was believed the climate acted as a kind of Bant to the system, but either this climate is losing its asperity or the art of living has become less wearing, for fat women abound, and, what is more, the flesh looks as though it had come to stay. The question also arises, does this increase denote less mental fret and worry? Are people happier for being stout? It looks jolly and good natured, but which is cause and which is effect?

NIGHT-CAPS.

Dr. Mortimer Granville published a letter in the *Times* in which he calls attention to the unprotected condition of the head while we sleep in a cold bedroom, or even in a warmed one, which, however, becomes cold toward morning. He says that when the weather is cold and much felt at night, the head, which is uncovered, has the blood supplied to it driven from the surface to the deep parts, notably the brain—the organ of the mind. The results are light sleep and dreams. The obvious remedy is to wear a night-cap, or wrap the head warmly; at least while the cold weather lasts. He says he believes we of this generation suffer more from brain troubles than our predecessors, because we leave the head exposed at night, and the blood vessels of our cerebral organs are seldom unloaded.

If an ounce of prevention is worth a pound of cure, the simple expedient of wearing a night-cap should not be neglected by those who are subject to neuralgia, headaches, dreams, insomnia, etc.

PREVENTIVE MEDICINE.

In my opinion (says Dr. M. A. Pallen) the practice of medicine will be revolutionized within the next few years. We will live to see the student and successful practitioner of to-day retire altogether from the actual practice of medicine, and establish himself as a consulting physician only. The learned surgeon or physician of the future will devote more time and attention to the prevention than to the cure of disease. It is no great trick to learn to set a fractured bone or prescribe a dose of salts. Such things will be relegated to a class of practitioners about on a par with what are now called nurses. Hygiene and sanitation will be the study of the physician of the future. Of course he must have a knowledge of drugs, anatomy, physiology, and such matters, but his office will be that of a consultant. The bone-setter and drug-prescriber will lay their cases before him, and he will advise them pretty much as the advice of an old-established counselor-at-law is sought by an attorney. The great question of the future will not be so much the cure as the prevention of disease.

HENRY WARD BEECHER.

As from the life and death of Father Beckx, so also from the death of Mr. Beecher, which occurred recently, sanitarians can point the pregnant lesson that hard work seldom kills, when well directed. Certainly, Mr. Beecher was a hard working man for more than half a century, yet his work was wisely ordered and he believed in Hygiene. It is a very dangerous fallacy to argue that longevity is solely dependent upon the inheritance of a vigorous constitution, as many scoffers hold. No one ever inherited more vigor than did Generals Grant and Hancock, yet they failed to reach old age, for

obvious reasons. While of course, vigorous and long lived ancestry lays the foundation for vigorous and long lived progeny, just as does the inheritance of pecuniary wealth pave the way for financial prosperity; yet, disregard of the laws of health will just as surely negate the benefits of inherited vigor, as will neglect of the laws of finance antagonize the advantage of inherited wealth. The one will surely result in premature physical, and the other in premature financial bankruptcy.

AMSTERDAM FOOD EXHIBITION.

In connection with the exhibition of articles of food to be held at Amsterdam from June to September, 1887, the following prizes have been offered: A prize of 500 francs with gold, silver, and bronze medals for a handbook of cookery for use in schools, to meet the requirements of life in Holland at the present time. A prize of 500 francs, with gold, silver and bronze medals, for a popular essay on the three following subjects: 1. The relation of the nutritive value and average market prices in Holland of the chief articles of food. 2. The influence of methods of preparation of the chief articles of food on their nutritive value. 3. The simplest criteria of the soundness of articles most generally used, to which the committee recommend the addition of a graphic tabular statement showing the chemical composition, price, and nutritive value of various articles of food. Intending competitors should first communicate with Mr. A. Van Duyl, Food Exhibition, Singel 451, Amsterdam.

DRUNKENNESS IN BELGIUM.

According to statistics, Belgium is the most drunken country in Europe. Where in 1850 there were 53,000 public-houses, there are now 195,000—that is to say, one

for every 44 of the population. The Government is, however, taking steps to repress and prevent drunkenness. Should the bills be carried, publicans who supply drink to persons obviously drunk, or to any one under sixteen years of age, will be liable to a fine not exceeding \$5.00 for the first offence, while if they cause a minor to drink to intoxication they may be fined \$20. Whoever is responsible for serious illness resulting from intoxication may be fined from \$10 to \$400, with from a week to two years' imprisonment, according to the gravity of the case. Should death ensue, a fine varying from \$50 to \$1,000, and from five to ten years' imprisonment, may be imposed. Public-house debts are no longer to be recoverable.

THE HEALTH OF MARSEILLES.

During the year 1885 the death-rate of typhoid fever was 17 per 100,000 inhabitants in London and in Berlin, 14 in Vienna, 63 in Paris, and 149 in Marseilles. In the latter city there were 91 deaths per 100,000 from small-pox, and a much larger proportion than this in 1886. The figures for diphtheria in Paris were 80, and for Marseilles 98; for scarlatina, 7 in Paris, and 23 in Marseilles. The latter city is the most unhealthful in France, and it would seem as though the authorities would finally wake up to the fact, and would exert themselves to enforce measures designed to render the city a fit place for human habitation, for which it now seems very poorly adapted.

LONGEVITY AMONG "FRIENDS."

Of the 229 "Friends" who died last year in Great Britain and Ireland, only 22 were under five years of age; between five and ten years were 5 deaths; between ten and twenty years, 9; from twenty to thirty years the deaths numbered 18;

from 30 to 40 years, 16; from 40 to 50 years, 22; from 50 to 60 years, 23; from 60 to 70 years, 51; from 70 to 80 years, 74; from 80 to 90 years, 69; from 90 to 100 years, 10. The low infantile mortality and the large percentage of deaths at great ages are remarkable even for the Society of Friends.

DISINFECTANTS DEFINED.

No little confusion exists in the popular mind as to what constitutes a disinfectant, a deodorant and an antiseptic. The American Public Health Association has defined these terms as follows: A disinfectant is an agent capable of destroying the infective power of infectious material. Agents which merely mask unpleasant odors are deodorants, and their purpose is not the destruction of disease germs. Antiseptics are agents having the power to arrest the process of putrefaction.

A HINT TO HOTEL PROPRIETORS.

No hotel proprietor can long fill his house without the closest attention to all the sanitary requirements. He may be able, by exterior and surface appearance, to do so for a while, but broken drains, cesspools saturating the soil, foul vaults threatening the water supply with pollution, and like defects, will sooner or later ruin his business. A single outbreak of any of the filth diseases is ruinous, and with neglect it is sure to come.

THE EPIDEMIC AT SHENANDOAH.

Just as we predicted eighteen months ago, when we reported on the horrible sanitary condition of the borough of Shenandoah, in this state, the people are suffering now a terrible epidemic of measles and scarlatina. In our next issue we will furnish a full report of this epidemic.

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Communications.

ON WHOLESOME WATER FOR CITIES AND TOWNS.

BY CHARLES SMART, M. D., MAJOR AND SURGEON U. S. ARMY.

[Concluded from page 102.]

It has been said at the beginning of this paper that the purest natural water is that which has been filtered through a clean soil. The organic matter is reduced to an inorganic condition. It becomes split up into transitional and unstable forms, the changes terminating in the rapid nitrification of a produced ammonia. A water thus purified may yield but little free or albuminoid ammonia on analysis, and even the nitrates that remain to indicate the former sewage pollution may constitute an apparently trifling quantity; but this water, pure according to the analytical record, may be a dangerous propagator of enteric fever if the sewage that has been destroyed was an infected sewage. The purifying influence does not affect the fever-poison, nor does the filtration remove it.

Now, if the infection of an infected sewage be not separable by filtration, and can withstand the powerful agencies that in the process of filtration destroy the accompanying sewage, will the infection of an infected sewage poured into the current of a river be destroyed by a flow

of so many hours in that current? Will that which cannot be separated by filtration be removed by subsidence in a flowing stream which is often manifestly turbid? Will that which is not destroyed by the most powerful of natural purifying influences be rendered inert by the weaker influences operating on the flowing water? If not, river waters that have been polluted with an infected sewage will communicate typhoid fever as surely as well waters that have been similarly contaminated,—and wholly irrespective of the results of chemical analysis.

Chemists, looking only at the laboratory results, have announced that the running water becomes purified as it flows, and that at a certain distance below the point of sewage inflow it becomes again as free from organic matter as it was before the introduction of the contamination. A distinguished authority in this country has spoken with emphasis on this point: "It should be distinctly stated," he has said, "that there is no foundation in fact for the oft repeated statement that water once polluted by sewage can never again become safe for drinking purposes. Wherever the pollution and subsequent self-purification of a flowing stream has been patiently investigated the chemical testimony as to the reality of this self-purification has been convincingly demonstrated." But the conclusions of the English Rivers-Pollution Commission are opposed to this claim. "It will be safe to infer,"

it is stated, "that there is no river in the United Kingdom long enough to affect the destruction of sewage by oxidation." Nevertheless, self-purification, to a certain extent, may be accepted as a fact. Dilution, sedimentation, aeration and nitrification go on in the current, and all that tend to improve the analytical record of the water; but the chemical testimony which convincingly demonstrates the reality of this self-purification does not demonstrate the safety of the water for drinking purposes. Dr. Buchanan, of England, summing up the results of a recent investigation, stated that we have no evidence in the case of an unknown water that it is safe organically, although the chemical testimony may place it in the list of waters of extraordinary organic purity; and, practically, the same conclusion was reached by the investigation conducted in this country by Professor Mallet, of the University of Virginia.

To demonstrate that a water which has been polluted by an infected sewage may again become safe for drinking purposes, it is needful to show that typhoid fever is not a prevailing disease among the people who use it. There are many difficulties in the way of effecting this demonstration, and chief among these appears to be the well-attested fact that typhoid fever does prevail among them, and in many recorded instances has been traced to the water as its source. Witness the epidemic of last year at Plymouth, or the Lausen epidemic, in which the water underwent a thorough natural filtration before propagating the disease. There is no difficulty in showing that typhoid fever prevails among people who use an infected water; but it is often extremely difficult to prove the charge against the water. We may appeal to statistics, but our statistical records are not always trustworthy. The typhoid influence of a general water supply may be modified by that of a supple-

mental supply from vitiated wells. Water carriage is not the only method by which typhoid is propagated. Not long ago sewer air was regarded as an ever present cause in our cities, and there seems no doubt that infected exhalations contribute to the prevalence of the disease. Secondary foci from primary cases may give rise by mediate contagion to local epidemics which obscure the influence of a weakly infected water supply. Nevertheless, there are some points, other than those already mentioned, in the natural history of the typhoid poison that countenance the belief in its propagation by contaminated river water. Typhoid fever differs from small-pox, measles and scarlet fever in having no cyclical prevalence. It is not a rare clinical study and sanitary anxiety at one time and a prevailing epidemic at another. Where many people are aggregated, its causes are always present and always in operation. But it has a well developed seasonal tide in its prevalence, which spreads its maximum in this country over the latter half of the third and the first part of the last quarter of the year. Dr. Baker, of Michigan, has shown that in his State this increased prevalence follows a low stage of water in the wells, when sewage inflow is less diluted than at other seasons. But the same period of prevalence holds good in the cities which have a general water supply, corresponding with the time when the sewage inflow into the streams is in like manner undiluted.

Again, in looking at the typhoid statistics of certain cities, in which the complicating elements appear to be at a minimum, we cannot fail to be struck by the fact that the prevalence of typhoid fever is in a measure proportioned to the sewage pollution of the water supply. It is to be noted in this connection that although a given sewage may not be an infected sewage, it must be regarded as

possessing the elements of danger in view of the general distribution of the fever in rural as well as in urban districts.

Brooklyn, Long Island, has a water supply perhaps less contaminated with sewage than that of any large city in this country. It has also a smaller rate of mortality from typhoid. Last year 23 persons died of this fever in every 100,000 of the population. This is not an accidentally small rate due to the absence of an epidemic during that particular year, for the average annual rate of the last ten years was only a little over 15 per 100,000. The city of New York has a water supply that is guarded with much care from sewage inflow, but it is derived from a much more extensive area than the Brooklyn water. The typhoid death rate last year was 21, and the average annual rate for the past ten years 26. A constant supervision is exercised over the water supply of the four millions of people aggregated in the city of London, England; and the mortality rate of the continued fevers, including typhus, amounted only to 17 during the past year, while the average annual rate of the past ten years was but little over 28 in the 100,000. These figures may be regarded as a standard of comparison for the rates of other cities.

The water supply of Boston has a careful superintendence, but it is known to have a certain amount of sewage inflow. Correspondingly we find that the typhoid mortality rates are higher than those already instanced. The rate for 1885 was 38, and the average of the past ten years 43. Cincinnati, supplied by the Ohio river, gives higher typhoid rates: 44 for the past year, and 63 as the average of the past ten years. Philadelphia, supplied chiefly by the Schuylkill, had a typhoid rate of 64 in 1885, and an average rate of 66 for the past ten years. These rates for Philadelphia mean that

during the past ten years there died of typhoid fever 4,400 persons who would not have died of that disease had the Brooklyn rates prevailed; and that over 50,000 people suffered from a dangerous and debilitating illness who would have escaped attack had Brooklyn causes operated on them instead of those of Philadelphia.

If the views that have been submitted are correct, we would infer the presence of an infected sewage in the Schuylkill water, or the presence in Philadelphia of typhoid causes that do not exist in Brooklyn, New York or London. According to the records of the Water Department of the city a notable sewage inflow has existed since 1860, when complaints were made of the foul taste and color of the water, and when certain sewers were specially mentioned as occasioning the impurity. A recent report says:

"The Schuylkill above Fairmount Dam is the natural sewer, first and last, for a population of 350,000, largely engaged in manufacturing; and whatever may be the varying judgments of physicists as to the power of a running stream to purge itself of foreign contamination, it is very certain that the river itself has, from time to time, furnished the most convincing evidence of its inability to digest or dispose of the extraneous and injurious matters discharged into it."

With regard to other assumed causes of typhoid, it does not appear that Philadelphia is specially their habitat. The aggregation of susceptible individuals on a given area undoubtedly facilitates the spread of this disease; but the area of Philadelphia is less crowded than that of most cities of its size,—certainly less so than that of New York or London. The progress of sewer construction has kept pace with the growth of the city. It has been demonstrated by many statistical comparisons that the introduction of a

system of sewerage has invariably lessened the death rate of a city, and particularly the rate occasioned by the zymotic diseases; yet Philadelphia, so far as regards typhoid fever, retains or even exceeds the rates that prevail in certain unsewered cities.

The following table shows in parallel columns the annual death rate from typhoid fever per 100,000 of the population in the sewered city of Philadelphia and in the unsewered cities of Baltimore and New Orleans. The rates for each of the past twenty years are given, yielding an average for Philadelphia 61, slightly lower than that for Baltimore, 65.4, and considerably larger than that for New Orleans, 33. When we restrict our inquiry to the rates of the past ten years it is found that Philadelphia has a higher mortality than either of the two other cities, 66.1, as compared with 52.5 and 24.6. The soil of Baltimore is honey-combed with pits and vaults of deposit; and although the city has had a general water supply for many years, the well-water supply has been used to a considerable extent. I have but little personal knowledge of the character of these well-waters. In 1879, I examined one of them, situated in the enclosure of the Johns Hopkins University. It was rather a rank ammoniacal solution than a potable water. The use of such waters may be held in view in regarding the rate of the first of these periods of ten years. In 1880, an additional supply was brought into the city from the Gunpowder river, and perhaps the consequent disuse of contaminated wells may account for the lessened frequency of typhoid of late years. At the present time there are 62 public wells in use, 13 of which are artesian; all the others have been condemned and closed. There are, however, many private pumps which are not under the control of the Health Commissioner. These, with a

trifling amount of sewage inflow into the waters of Jones' Falls and the Gunpowder river before they reach the storage lakes, may be held responsible for the typhoid prevalence at the present time. The sanitary condition of New Orleans will be referred to hereafter.

Annual death rates from typhoid fever per 100,000 of the population in:—

	Philadelphia.	Baltimore.	New Orleans.
1866	60	80	65
1867	57	94	66
1868	60	65	31
1869	56	80	34
1870	61	99	42
1871	45	73	37
1872	52	65	34
1873	50	82	29
1874	62	83	47
1875	55	62	28
Annual rate for the decade—	55.8	78.3	41.3
1876	98	60	26
1877	68	75	33
1878	50	55	21
1879	41	51	15
1880	59	59	24
1881	74	58	30
1882	73	47	33
1883	63	36	23
1884	71	42	25
1885	64	42	16
Annual rate for the decade—	66.1	52.5	24.6
Annual rate for past 20 years—	61.0	65.4	33.0

In a valuable article, read last year at the Ypsilanti Sanitary Convention, Dr. Erwin F. Smith has tabulated many of the statistics bearing on the lessened mortality from typhoid, coincident with the introduction of a general water-supply and a system of sewerage. These are usually contemporaneous improvements, but the removal of the filth by water carriage constitutes so notable a change in the sanitation of the municipality that the influence of the water-supply is generally regarded only in so far as it has contributed to that end. Nevertheless, it is a question if the water-supply *per se* be not

a more important factor in the subsequent decrease of sickness than the system of sewerage. On its introduction the water is usually of excellent quality. It takes the place of dangerous waters from the sub-soil of the city, and contributes proportionately to the typhoid diminution. But, later, as the water-supply becomes defiled by the growth of settlements on the area of its derivation and along its course, it may become as much charged with dangerous matters as the well-waters which it supplanted.

To what extent the Schuylkill water-supply is responsible for the typhoid rates of Philadelphia is not for me to indicate. Due consideration must be given to all the other influences that are known to favor the propagation of the disease. One of these, the sub-soil water, still operates to a considerable extent, although the Board of Health has taken action against it and directed the closure of the wells. Dr. Leffmann in a recent paper suggested that the irregularity of the distribution of the deaths from typhoid throughout the city is opposed to the idea of typhoid propagation by the Schuylkill supply; but local epidemics, originating in infected wells, may account for this irregularity without excluding the possibility of a generally diffused but less marked prevalence. It does not appear that in New York City the disease is confined to any particular locality; its distribution is general:—and the maps of the health officer of Washington city show an indiscriminate scattering of the deaths over the populated areas.

One other argument in favor of the connection between a sewage-polluted water and the prevalence of typhoid may be derived from the recorded statistics of mortality. If it were possible to build a city with all the sanitary conditions, whatever they may be, that underlie the surface of Philadelphia, and to supply that city with water certainly free from sewage, a death-

rate from typhoid in this supposed city equalling that of Philadelphia, would throw the causation of the disease upon other agencies than the water supply; and correspondingly a comparative freedom from typhoid in the supposed city would strengthen the argument in favor of a water propagation for the diseases in Philadelphia. Such a city cannot be built to order; but fortunately New Orleans presents us with many of the essentials of an experiment of this kind. New Orleans has no sewers; all its liquid filth flows sluggishly in open channels by the sidewalks; its more solid refuse is collected in boxes, in closets and outhouses, whence it is carried to the current of the Mississippi; the subsoil water is so impregnated with drainage from the surface as to be unfit for prtable use; and the exhalations from the sluggish drains, the closets and outhouses, not unfrequently taint the air in many parts of the city. Here are conditions as to subsoil and surface which would be regarded as accounting sufficiently for an extensive prevalence of typhoid were it found to be present. Certainly they must be considered as more conducive to the spread of zymotic disease than the corresponding conditions of subsoil and surface in Philadelphia, for the general results of modern sanitation show a sewered city to be a healthier abode than one that is not sewered. But this city of New Orleans has a water-supply that is free from sewage inflow. The Mississippi water is pumped up mainly for use in flushing the streets and drains, while the domestic supply consists of rain-water collected and stored in cypress wood cisterns which are raised above the suspicion of a contamination by sewage. And the typhoid mortality, 16 during the past year and 25.6 as the average of the past ten years, is as low as the standard rates furnished by the cities of New York and London.

May we conclude from these arguments, that the inflow of sewage into a stream is fraught with too many dangerous associations in connection with typhoid fever to warrant the use of its water as a general supply, no matter how convincing may be the chemical testimony as to its organic purity? Whatever other modes of typhoid propagation may be allowed, that from the sewers and vaults, which are the "continuation of the diseased intestines," is incontestable. The influences operating on the flowing water do not destroy the essence of the disease, nor, as shown by the history of every infected well, does the process of filtration effect the separation of the poison. The advocates of sewage irrigation become enthusiastic over the clearness and purity of the water that flows from their under-drains, and suggest that the general use of this system for the disposal of sewage would reclaim our polluted streams and permit them to be again used with safety for household purposes. But the essence of sewage irrigation is filtration, and filtration through a notoriously polluted soil. The unwholesomeness of well water in a soil saturated with sewage has been so often illustrated, that we may well be excused for showing some hesitancy in accepting the effluent water of sewage irrigation as a general household supply. The adoption of this system of irrigation would undoubtedly prevent our streams from becoming open sewers; but here the advantage ceases. So long as we know that, not sewage, but a sewage polluted mountain stream used for irrigating purposes in one valley occasioned a general outbreak of virulent typhoid among the inhabitants of another valley, who used the clear water of the effluent; we must acknowledge that filtration cannot be trusted to render an infected water safe. Hence, if the conclusion above suggested be admitted, the only method by which typhoid, com-

municated by a general water supply, may be avoided is to procure a supply of water that is free from sewage and preserve it in its condition of natural purity.

The vegetable matters in a water appear to be dangerous in proportion as the water exhibits the usual characteristics of marsh or swamp waters. The organic matter in these is comparatively large in quantity, and contains a larger proportion of carbon combined with its nitrogen than is found in animal matter. This is shown in the laboratory by direct analysis, or indirectly by the large quantity of oxygen that is required to oxidize a matter yielding a relatively small quantity of albuminoid ammonia. The microscopic life in these waters is of an elementary form, consisting largely of sluggish protoplasmic masses. Remittent fevers have been frequently associated with the use of such waters. But it does not follow that these vegetable matters in themselves constitute the essence of malarial disease. The accepted theory is that organic matter during its decomposition, under certain conditions in the soil, evolves a noxious miasm. This miasm escapes into the atmosphere and its subtle influence is felt at considerable distances from the place of exhalation. It is known to be condensed and concentrated by fogs and falling moisture, and it seems probable that even the rainfall is not free from a taint of this impurity among the other impurities which it washes from the atmosphere. But, the chief source of a malarial contamination in our surface waters is their contact with an exhaling soil. Hence, although a malarious water may exist without an associated charge of vegetable organic matter, it usually contains a very notable quantity; and this quantity may be regarded as an index of the malarial possibilities of the water.

The propagation of malarial diseases by means of the drinking water has of late

years been generally accepted by the profession. Proof was difficult to obtain because of the long continued and unquestioned acceptance of the doctrine of an aerial miasm. When the requisite spot of malarious soil was not present to account by its exhalations for some obscure or anomalous case the existence of such a spot was assumed, for it seemed more plausible to suppose that the malarious locality had escaped recognition than that the time honored doctrine was inadequate to explain all the cases. But when attention was directed to these obscure cases they were found to be very numerous. They were common in all our Western territories on elevated grounds where there was apparently no source of malarial exhalations; and these cases were always of a serious character,—remittent fevers rather than simple agues. They were common, also, in our large cities where drainage and cellarage gave a dry subsoil and the surface was more or less sealed by street paving; and these cases also, were of a remitting or sub-continued form. They were common in certain districts of the country in the Winter season where the theory of a malarial miasm exhaled into the atmosphere and inhaled into the lungs was inconsistent with their existence, inasmuch as the frosts of the season or a thick covering of snow should have imprisoned all such exhalations; and these cases, also, were found to be severe rather than mild. But in all these instances of serious malarial disease without malarious soils to account for them, the drinking water used was not above suspicion, and in many the prevalence and aggravated character of the sickness was proportioned to the amount of vegetable impurity in the water. On the assumption that the water was impregnated with the malarial essence, these obscure cases ceased to be obscure. But this is not an assumption, for there is a groundwork of observations

to support it as solid as that which sustains the theory of aerial transmission. Many years ago a well-known medical investigator reported the occurrence of pestilent malarial fevers among troops on a transport that had been supplied with marsh water. The evidence was so strongly guarded at every point that no doubt could be entertained as to the causation of the fever among these men. Since then dangerous fevers have frequently been referred, on more or less satisfactory testimony, to malarious surface waters; and it is notable that the disease when introduced in this way is always of a more aggravated type than when caused solely by exhalations,—the poisonous water appearing in a general way to be a more concentrated and deadly agent than the poisonous air. Moreover, and this is of grand importance from a preventive point of view, the prevalence of these fevers has decreased with an improvement in the water supply. The remittents of our Western territories have declined in frequency and virulence since the country became settled and a better water supply was found than that of the ponds, ditches and tanks used by the early overland traveler and settler. The evidence from India is very explicit on a similar decline of the pestilential fevers. Recent reports from some of the most unhealthy districts show an extraordinary change in the insalubrity of the country coincident with the procurement of a supply of drinking water from deep and carefully protected wells. Along the base of the Himalaya mountains is a broad strip of marsh and forest land called the Terai, which for many years has been uninhabitable owing to the prevalence of malarial fevers. Continued efforts were made by the Government to reclaim and populate this tract, but only with partial success. The strife between enterprise and malaria was carried on, but at the expense of a fearful

sacrifice of human life, until recently when the construction of deep masonry wells has permitted positions to be held which a long experience had pronounced uninhabitable. The natives have for ages believed in the transmission of the fever by means of the surface water, and this belief has at last been accepted in its entirety by the Government, and, as reported, with beneficent practical results. Villages that were formerly unhealthy have ceased to be so, and the change has been sharply defined and contemporaneous with the construction of masonry wells. These experiences fully support the evidence brought by Professor Parkes from the Crimea to the effect that the villagers there who drank surface water had fever all the year round, while those who drank well-water had fever only in the summer and autumn.

All the observations and arguments hitherto advanced in favor of the transmission of malarial disease to the human system by means of the water supply have equal force on behalf of filtering the surface waters that are to be used for drinking purposes. In no instance has malarial disease been traced to the use of well-water untainted by a direct inflow from the surface. Dangerous malarious waters from marshes and other soils rich in vegetable decay leave their noxious constituents behind them in percolating through the soil, and appear in the well as pure and non-malarious waters. Filtration is therefore capable of removing from a surface water the essence of the remittent fevers that may be present in it.

This brief review of the pathogenic relations of the animal and vegetable matters that find their way into our running streams, under the conditions of the present time, teaches us how a certain proportion of the sickness and mortality now prevalent in our growing settlements may be avoided. Spring water issuing from

an unsullied soil is destitute of morbid qualities. Nature is bountiful and provides for all the needs of creation in the cyclical repetition of her processes. The waters rise from their great store-house under the influence of the solar heat. They pervade the atmosphere, and massing from time to time, are precipitated, carrying with them the accumulated impurities that would otherwise soon render the aerial ocean turbid and unfit for the support of life such as ours. They flush the surface of the earth, freshen its verdure and carry into the rivers all the detritus of animal and vegetable life. The river-water is nature's sewage, and its destination is the ocean. The rain water becomes impure in carrying out the purpose of its fall in the economy of nature; but all its impurities are removed from that part of it which penetrates the soil to feed the springs.

The experience of all the ages testifies to the purity and desirability of the spring supply. When the Israelites were famishing in the Wilderness they obtained manna from Heaven, but their water supply came from the rocks of Massah and Meribah when struck by the rod of Moses.

Under the conditions of our modern civilization it seems impossible to bring the spring water in its pristine purity to our homes, but it is only a question of money and an intelligent and watchful superintendence to have a water which will be its equal in wholesomeness. Animal matter with its typhoid possibilities must be excluded by the selection of a suitable source the area of which must be afterwards protected to the full. But the most careful surveillance will fail to exclude the malarial possibilities associated with the vegetable matter of an otherwise healthful surface. To remove these Nature's process of filtration must be imitated. Thus only will a water be obtained free from the danger

of typhoid fever on the one hand and of malarial disease on the other,—a pure, clear and wholesome supply, which, by preserving the community from unnecessary sickness, will in a short time amply repay the expenditure involved in its introduction.

WHAT THE STATE OWES TO THE PEOPLE AND THE PEOPLE TO THE STATE.*

By the Late Honorable Erastus Brooks, of New York;
Late a Member of the New York State Board
of Health.

[Concluded from page 88.]

FACTS FOR PERSONAL KNOWLEDGE AND REMEDIES.

1. Carefully studied records show that typhus fever is due to a specific poison, often producing disease, conveyed into the human body through the agencies of bad food and polluted air, and, in many places, by bad well water, coming from cess-pools and like exposures. Sewer digging is another serious source of evil.

2. Scarlet fever and scarlatina may be diminished, if not stamped out, by proper exclusions, and restrictions in schools, families, and among large bodies of people collected together. Not alone the personal presence, but even clothing not used for a year, has produced this disease.

3. Diphtheria once started increases in proportion to the neglect of sanitary conditions. Decayed vegetables, fruits, and perishable fruits and products, if neglected, mean disease; and especially is this apparent where the soil is moist, as near swamps, marshes, and immovable bodies of water. Eighty per cent. of the worst cases were found at Lynn, Massachusetts, during the worst year of the disease in

that locality. Even the kissing, or the breath of a friend, may communicate diphtheria. The soil needs watching whenever his and kindred diseases are found. Malaria is always most prevalent near the surface.

On the marshy district of an infected town on Lake Michigan filth has been traced through the ground over one hundred feet. Where it is the least visible, it is often the most penetrable. All malaria and miasmatic fevers revel in extreme moisture.

Children are the first victims, and children can communicate diphtheria to strong mothers and stout fathers. Sometimes this disease comes from natural conditions, but more frequently from positive filth. Surfaces of mud are a part of this filth, and the sun and air may stimulate it. Though this disease is comparatively new in name, it was christened at Tours, in France, in 1818, and is even described by Hippocrates. The new facts seem to be its propagation in the form of microscopic plant.

4. Water used for drinking needs watching, and an analysis, where there is doubt or ignorance of its source or supply, is required. The transmission from wells, brooks, and springs to dwellings also need watching. Even ice, with the pure surface, may be contaminated where the water is not pure. Polluted waters are rarely detected by touch, taste or smell, and only chemical and microscopic examinations can trace the real sources of soil. Surface wells are dangerous and sub-soil wells are undesirable. Rain water is the best of all for purity. Boil it for thirty minutes and the worst enemy is gone.

5. Sewerage is another public enemy. Sulphuretted hydrogen and ammonium sulphide are found in our sewers, creating organic fetid vapors; and these, if not wholly decomposed, make them fatally foul. Even one part of these gases to two

*The Annual address before the State Board of Health of Pennsylvania. Delivered May 12, 1886. From advance sheets of Annual Report.

hundred and fifty of pure water, in the common atmosphere, it is said, will kill a horse, and double the quantity a dog, and only six parts small birds.

The schoolmaster who teaches pages of grammar, books of arithmetic, and the higher mathematics, chapters of logic and volumes of history and literature, should be requested to teach more of chemistry and physiology, of anatomy and hygiene, and even the principals of life insurance may be taught wisely and timely. The common schools and academies teach practically little or nothing of these subjects, and our colleges and universities but very little.

One other source of health, depending more upon the people than the State, may be traced to tenant homes, homes such as have been partially begun in New York, (and where 2,478 deaths took place as certified to by the coroner without medical attendance), in Brooklyn, and more extensively in England, as described by Sir Sydney Waterloo, M. P., when visiting New York, and a philanthropist who has given many years to tenement-house reform. In 1854 he sought to secure, in the humbler homes of the people, immunity from disease, by inspection and safety from fire, and the effect of this little more than individual effort was to reduce the average death rate from forty to eighteen in each thousand persons, and the rate of insurance, on properly built tenant dwellings, to seven cents on each \$100, with a small rental for each comfortable room during the time of occupation.—*Peabo'y*.

The homes of the people are the real sources of happiness, and what is best for health should be established and recognized there, and in properly constructed and regulated workshops, school-rooms and churches. In the latter physiology and physic may at times enter into that divine philosophy which teaches the ways of God to man, and in the very front

rank of this intelligence should be the duty and wisdom of creating, establishing and maintaining the health of the people.

The work of Florence Nightingale in England and the Crimea, in peace and in war, in the hospital and in the camp, shows what one woman can do to save life and relieve suffering. In a like spirit, in a different field of labor, but inspired by the same divine thought, Octavio Hill, in London, possessed for long periods of time various pieces of tenement property, each one wretched in itself, and worse in the character of its inmates, and, as a lessee, visitor and friend, cleaned and repaired, made habitable and comfortable, all these hitherto miserable dwellings. In the same spirit a committee of benevolent ladies, to the great saving of health and life, have in charge as many as possible of the more than twenty-three thousand tenement houses in the city of New York.

I read of the lives of 10,000 children saved in a short time in England, simply by the proper care in the use of the gifts of God to man. These agencies have been the medicines of nature, air, water, and care, prescribed by a little practical wisdom. I read also in thirteen towns of England of a decrease of more than 17 per cent. in the death rates from proper sewerage alone; but there, as here, there remains immense room for improvement. In a country like Belgium, the average lives of the cleanly and thrifty are fifty years, and of the filthy and negligent, the average length of life is only thirty two years, and Belgium in this respect is not a peculiar country.

I leave it to experts and to the doctors to be specific as to the origin, character, extent and definition of diseases. As a layman I see and comprehend the effect they have upon organized communities, peoples, and individuals. I know what foul air, impure water and bad food mean, and I would, if I could, remove them

from all conditions of household and animal life. Yes, and I would, if I could, remove them from the face of the earth. I try to distinguish between abnormal decay, common to human existence, and the decay which comes from disease. Science and art long ago banished from the world the wholesale pestilential loss of life in what was called the disease of "Black Death," and "Sweating Sickness." They killed more than great wars.—*Canaro*.

The study of chemical combinations, of biological conditions, and of epidemiological relations, as a layman, I may not understand; but every one can comprehend what an epidemic is, and if he can trace it to foul water, to exposed cess-pools and other tangible offenses, the way is pointed out to remove the cause and to remove the evil. The sick animal and the sick plant, and whatever causes or enters into the decay of man must be cured, or the natural consequences follow.

As the proverb says, "An ounce of prevention is better than a pound of cure." Even the brute creation, as in the marshes near Rome, have, through experiments, shown symptoms of malaria produced by infection of the soil and air.

Dr. Billings states that 100,000 lives are lost each year from sheer neglect, and 200,000 cases of prolonged sickness are added during the same year. In reality the dead and the sick, who might be saved, are far beyond these figures. The greatest loss is during the age of childhood; but neglect, ignorance and vice spares neither age, condition nor sex in any of the years of our lives. Death rates are among the important studies in sanitary science; because, first, they give a very sensitive test of sanitary conditions; and, secondly, the places where they are most apt to die are necessarily the places where survivors are most sickly, and where, if they survive, they beget a sicklier brood than themselves, even less capable of labor

and less susceptible of education. A high local mortality of youth must always necessarily denote a high local prevalence of the causes which determine a degeneration of race. Dr. West says the frail child never passes completely into womanhood, but fades and droops in the transition stage through which she has not the strength to pass; and this is the sad record of advancing years. We know from experience, how in the State, pauperism may be perpetuated in the double form of immorality and disease.

The birth rate, it may be interesting to state, is largely in excess of the death rate, or 36 in 1,000; and the annual increase of births over deaths numbers 878,572.

In contrast to the sad records (many before me) let me say that upon the whole the health service of the country, and of the world, is certainly improving; but while this is true, it is necessary to add that, as an entire people, we are only in the beginning of the required work of real civilization. The death rate in the United States army from all causes is but nine per thousand of white men and twenty per thousand of colored troops.

In my State I record with satisfaction that since the establishment of the State Board of Health, local Boards have been organized in twenty-four cities, nearly three hundred villages, and in all of the 900 towns of the State. The cause of this improvement is due to the fact that physicians in many of the counties of the State, supported by boards of supervisors, village trustees, county, town and district clerks, and, indeed, by nearly all county officers, have been requested to co operate with the State Board of Health in maintaining public health at home, and to this end they were asked to respond to any and every call looking to private and to public works for the consideration and discussion of measures relating to drainage, sewerage, and general cleanliness;

to the ventilation of schools and public institutions; to supplies of pure water; to the proximity of wells to cess-pools; to the adulteration of food and drugs, as affecting health, and to all general work which seeks to secure the health of the people. Work at home, as the best missionary field of labor, is the first improvement needed. The best work always begins there.

When, many years ago, Lord Palmerston met his Scotch petitioners, asking for a day of fasting and prayer, he gave them the wise but rather startling answer: "Go home, and see that your towns and cities are freed from those causes and sources of contagion which, if allowed to remain, will breed pestilence and be fruitful in death, in spite of all prayers of a united but inactive people!" And Ruskin, at a later day, declared that "any interference which tends to reform and protect the health of the masses is viewed by them as unwarranted interference with their vested right to inevitable disease and death." And this amiable cynic induced Octavio Hill to invest ten thousand pounds sterling of his money in the lowest quarter of the city, where she might witness the transforming power of its worth in sanitary reform. And so this noble woman, aided by Ruskin's money, proved that wealth is health, and that health means the happiness of the people.

In this spirit, Ralph Waldo Emerson, many years ago, in his words on "One in Robust Health," said, in a spirit which I have endeavored to inculcate: "The first wealth is health. Sickness is poor-spirited; it must husband its resources to live. But health answers its own ends, and has to spare; runs over and inundates the creeks and neighborhoods of other men's necessity."

Let me prescribe one other rule of business, and for domestic and public duty; banish from your dwellings all possibilities

of contamination from effete matter, all noxious and miasmatic gases from fecal decompositions resulting from soil and sewer pipes. Obstructed pipes send back into your closets, sinks and basins the foulest odors, and only the freest flow of water can keep them clear and clean.

If the sources are all pure and the road straight and clear, there is a way of escape. The head of every house and building should be practically a health inspector. Open the doors and windows of your dormitories and school-rooms, that the sun and air of heaven may enter therein. A little care will shut out filth and darkness, and make room for the light and the vigor of health. One marked feature of our American life is the disease known as fret and worry.

The haste and zeal of the times causes what is called "American nervousness," which means mental and physical derangement, and which, in turn, again means what has been characterized as hypotism, hysteria, catalepsy, somnambulism, and other preternatural and abnormal manifestations and hallucinations, as seen, in part, in Guiteau's villainous purpose, whatever the measure of his alleged insanity, for killing President Garfield. Some of these evils are born of deceit, passion, vanity and imposture. Others are born of intemperate lives and habits and education, and produce insomnia, dyspepsia, irritability, and a long train of nervous diseases, or disorders, characteristic of the times and the people. These are the diseases which lead the way to asylums for the idiotic and the insane, where it is so hard to—

"Minister to the mind diseased,
Pluck from the memory a rooted sorrow;
'Rase out the written troubles of the brain;
And, with some sweet, oblivious antidote,
Cleanse the stuff'd bosom of that perilous stuff
Which weighs upon the heart."

The only offset to this amount of fret and worry is a corresponding reduction of

inflammatory diseases; and this secured is almost, if not quite in proportion to the growth of nervous irritability, with a corresponding increase of longevity when disease is most apparent.

But leaving all these specific references to life and death, disease and cure, let me close with a single reference as to the duty of the citizen and the State, condensing both in one: "Duty is a moral obligation imposed from within; obligation is a duty imposed from without. Duty implies a previous obligation; and an obligation involves a duty. * * * My obligation is to give another man his right; my duty is to do what is right. Hence duty is a wider term than obligation. Duty and right are relative terms. If it be the duty of one party to do something, it is the right of some other party to expect or exact the doing of it."

REMARKS ON VACCINATION.*

BY W. M. WELCH, M. D.,

Physician to the Municipal (Small-pox) Hospital of Philadelphia.

I risk nothing of truth by asserting that of the innumerable advances in sanitary medicine, from the time of Hippocrates to the present, the discovery of vaccination is the most important of all. No other single discovery has been the means of mitigating so much suffering and of saving so many lives as that of Jenner; and his name, therefore, deserves to be placed at the very head of the long list of benefactors of the human race—a class of men which the world too often forgets to honor.

Jenner's attention was first called to the subject of vaccination by hearing a country woman remark that she could not take small-pox because she had had cow-pox. Upon investigating the subject, he found that milkers of cows not unfrequently

became infected by an eruptive disease which appeared on the udder of the cow (a disease evidently more common then than now), and that to such persons it was impossible to communicate small-pox by inoculation. He thus began to study scientifically this traditional belief of the country people of his neighborhood as early as 1776, but on account of the opposition and ridicule with which his theory was treated, even by the most eminent men in the profession, he did not venture to do his first vaccination on man until 1796. He then clearly demonstrated the fact that cow-pox once communicated to the human being may be transmitted from that person to another, and so in endless succession. In 1798, Jenner published his first important paper on vaccination; this paper, though I regret to say not often read, stands to-day a highly interesting and instructive treatise on that subject. In the year 1800, the "new inoculation" (as vaccination was then called), was introduced into France, Germany and the United States. It may be interesting to a part of this audience to know that vaccination was first successfully performed in Philadelphia, November 9th, 1801, by Dr. John Redman Coxe.

In the short space of time at my disposal, I cannot stop to consider the various methods of performing vaccination, or even to describe the course of true vaccinia, important as these topics are, but must hasten to discuss very imperfectly a few of what I conceive to be the more interesting and attractive questions connected with this subject.

The introduction and extensive progress of animal vaccination in this and other countries within the last few years, very naturally suggests the question, both to the profession and the public, what is the comparative value of bovine and humanized vaccine virus? I have studied this question very carefully, and have no

*Read before the State Sanitary Convention.

hesitation in saying that there is really no difference between the action of bovine virus and that of recent humanization; but between the action of either of these viruses and that of long-humanization, there is a very marked difference. Vaccinia induced by animal or recently humanized virus requires for the fullest development and completion of its course not less than twenty-one, and frequently as long as twenty-eight days—counting from the time of insertion of the lymph until the falling off of the crust—and is sure to be followed by an indelible scar, distinct and well-defined as if stamped by a sharply-cut die. On the other hand, vaccine virus far removed from its original source induces a vaccine disease of much less intensity and of considerably shorter duration. The scar also differs in a corresponding degree, being much less distinct and often quite uncharacteristic.

In 1836, when the cow-pox of Passy was discovered, there was found to be a very great difference between the course and duration of vaccinia, resulting from the use of the new virus, and that of the old; the latter at that time represented thirty-eight years of uninterrupted human transmissions. In 1844, after eight years of humanization of the Passy stock of virus, it produced vesicles which ran their full course in three days less time than when it was first discovered. The vesicles of the Jennerian stock of virus, after thirty-nine years of uninterrupted human transmissions, were found to undergo desiccation in twelve days, instead of seventeen, which is the standard period, losing in that time five days of their maturing period. The late Dr. Martin, in one of his very valuable contributions writes that, in 1859, he obtained from Ceely a supply of long-humanized lymph which he continued to propagate for several years, and that the course of the disease induced by this virus was usually

eleven days, counting from the time of insertion until the crust would fall off, or could be readily removed. He also says that for nearly ten years he propagated virus which he received from the National Vaccine Institution of Great Britain, and that this virus induced a disease, the duration of which was fourteen days, very exactly, from insertion till the fall of the crust. When a public vaccinator in this city, from 1867 to 1870, which was prior to the introduction of animal vaccination in this country, and the stock of virus in use doubtless being the same as that from the National Vaccine Institution of Great Britain, I found it necessary, in order to collect crusts for further use; to visit the persons I vaccinated not later than the fourteenth or fifteenth day after inserting the virus; if I delayed my visits to a later day, my harvest of crusts would prove very scanty. How different is all this from our experience at the present time! The virus now in general use is either bovine or not many removes from the animal, and I am sure we will all agree that, in the vaccinations of to-day, it is impossible to remove the crust, without doing violence to the arm, earlier than the end of three weeks, and frequently not until the end of the fourth.

My experience leads me to assert most positively that vaccinia of short duration is capable of destroying in a person the susceptibility to small-pox. But whether the protection it asserts is as durable as that which results from the more typical form of the disease, I have good reason to doubt. On account of the greater reliability and certainty of action and more speedy action of humanized virus somewhat remotely removed from the heifer, I very much prefer it to bovine for vaccination after exposure to the small-pox contagion. Over and over again have I been able to give absolute protection against small-pox by the use of long-humanized

virus employed after there was undoubted and continuous exposure. Bovine lymph employed under such circumstances has not given me anything like the same satisfactory results; and for no other reason than its uncertainty and slowness of action.

As already intimated, it is my opinion that the prophylactic power exerted by long-humanized virus is less durable than that exerted by bovine lymph or lymph of recent humanization. This opinion is not based on any direct proof, but rather on a strong inference or logical deduction which cannot be elaborated in the brief time assigned me.

During the last several years there has been a growing belief in the popular mind that humanized virus is liable to convey into the system some constitutional taint. Whether this fear is real or imaginary, I will not stop to consider; but surely animal virus is free from any such imputation, and therefore its introduction into general use is calculated to minimize the opposition to vaccination. Another advantage possessed by animal lymph is that in time of a widespread epidemic of small-pox, virus sufficient to vaccinate whole communities can be furnished at short notice.

The question is often asked, are multiple vesicles more protective than single ones? Most writers, I know, answer this question in the affirmative, but my own experience leads me to say that a single, typical vesicle, running regularly through its various stages, gives as great protection as it is possible to obtain from a dozen or more. If, however, the virus to be used is of long-humanization and quite weak in its action, it would be well to make three or four insertions. The practice of making multiple insertions doubtless grew into use in consequence of the deterioration of long-humanized virus.

I will not waste time by proving to you what is so well known, namely, that

vaccination exerts a prophylactic power against small-pox. I will briefly dispose of this question by saying that the occurrence of small-pox, in any form, after a recent, typical vaccination, is very rare indeed; and even in the rare instances in which varioloid does occur, the attack is so mild that death never results except, perhaps, in a very feeble person.

While vaccination almost always confers perfect protection against small-pox, that protection, particularly if it be conferred in infancy, cannot be depended upon to continue throughout the life-time of the individual. If, however, the vaccination be done later in life, say at ten, twelve or fifteen years of age, the chances of the protection being permanent are much greater. It seems probable, therefore, that the changes in the system incident to puberty have in some unknown way much to do in re-establishing the susceptibility. I do not wish to be understood as saying that protection from vaccination in infancy is never permanent, for that cannot be truly said. Perhaps in about 25 per cent. of persons there is not the least deterioration of the protection by time; but in the other 75 per cent. various degrees of susceptibility are re-established in the course of a variable length of time—some taking small-pox in a very mild form, and others as severely as if vaccination had never been performed. The character of the vaccine cicatrix even cannot be depended upon as clearly determining anything in regard to susceptibility. It is true that a good cicatrix is stronger evidence of protection than a poor one; but it must be remembered that it is only evidence, not proof. I have seen hundreds of persons who were vaccinated in infancy and presenting typical cicatrices suffer from small pox in adolescence and adult life; and the death-rate among this class of patients is far from being insignificant. The sooner,

therefore, the public, and, I may say, the profession too, come to recognize the fact that vaccination in early life, however typical, cannot be depended upon to confer permanent immunity from small-pox, the sooner will communities be spared from the decimating effect of constantly recurring epidemics of this most horrible disease, because such a knowledge would lead to the more general adoption of re-vaccination.

This brings us to consider, lastly, the value of re-vaccination. Many think that because the vesicle of re-vaccination does not as a rule pursue the regular course of that of true vaccinia, the effect is merely local, exerting no prophylactic power whatever, and therefore that re-vaccination is unnecessary. But surely re-vaccination, to be successful, need not necessarily pursue the typical course of vaccine, for we know that small-pox itself after vaccination frequently differs very markedly from the course of the true disease. If then we have modified small-pox, or varioloid; after vaccination, may we not also have modified vaccinia, or vaccinoid? Believing this, as I do, the conclusion is inevitable that as varioloid gives protection against a recurrence of small-pox, so also does vaccination exhaust whatever susceptibility to the disease may have been acquired since the previous vaccination.

At what age should re-vaccination be performed? The answer to this question depends very much upon the thoroughness of the primary vaccination. A child well vaccinated in infancy only occasionally takes re-vaccination under ten years of age; but under circumstances of great exposure to the contagion of small-pox, it would be well to re-vaccinate children somewhat under that age. During the second decennial period of life the necessity for re-vaccination very greatly increases. A person who has been well vaccinated in infancy, and again at or

above the age of fifteen years, will, as a rule, remain protected for the remainder of life. But if one wishes to feel perfectly sure about his protection, it would be well to have re-vaccination done whenever small-pox prevails.

In seeking for evidence to prove the efficacy of re-vaccination, we need only consult the statistics collected during the Franco-Prussian war. It is well known that in no country is vaccination more carefully and systematically performed than in Germany. Every infant there is vaccinated before it has completed its first year, and re-vaccination is done at or about the twelfth year. Every person entering the army is again vaccinated, and, if that fails, the operation is repeated until the surgeon is satisfied that the person is insusceptible to vaccinia. Hence the German army may be said to be a well vaccinated army. On the other hand, in the French army vaccination and re-vaccination were in no wise compulsory. During the war small-pox prevailed to an alarming extent, and both armies were freely exposed to the contagion. The loss by death from that disease in the German army was only 263 men, while the deaths in the French army amounted to the enormous proportion of 23,468; and the French army was never very much more than one-half the size of the former.

Physicians connected with hospitals for the treatment of small-pox bear testimony very uniformly to the fact that persons with a history of successful vaccination and re-vaccination are very rarely admitted as patients. Not only is this true in my own experience, but, furthermore, I have never seen a nurse, or any employé in the hospital in this city take small-pox, provided vaccination or re-vaccination was well performed before entering upon duty. While, on the other hand, the disease has attacked a few such attendants,

in whom re-vaccination was for some reason omitted, or neglected.

Did time permit I might add very largely to the evidence presented in this paper proving the prophylactic power of vaccination; but we have before us, I think, facts sufficient to warrant the conclusion that if vaccination were effectively performed in infancy, and re-vaccination universally employed at the age of puberty, the world would then begin to realize that Jenner was no mere dreamer when he claimed for vaccination the power to extirpate small-pox from the face of the earth.

THE PRESENT AND PROSPECTIVE SANITARY CONDITION OF PITTSBURG, PA.*

BY CROSBY GRAY, HEALTH OFFICER,
OF PITTSBURG.

For convenience of description and simplification of details, we deem it advisable to divide the city into *three* divisions. Nature did this for us originally, while the site was still an unbroken wilderness, but instead of *three* divisions she made *four*. On one of these, viz: that portion lying north of the Allegheny river, is located the City of Allegheny, with a population of 95,000. It is connected with Pittsburg by numerous bridges, and although practically forming a part of it, it has a separate municipal government and does not come within our jurisdiction. There remain then to the city the three natural divisions locally known as the "Old City," the "East End" and the "Southside," containing an area of 29.3 square miles, and a population of 200,000. In general terms the population clustered around the point where the Allegheny and Monongahela rivers unite to form the Ohio made be modestly estimated in round numbers at 300,000.

"OLD CITY."

The portion known as the Old City comprises the original twelve wards, and is located in the angle formed by the union of the Allegheny and Monongahela rivers, extending back to a line of hills, rising at its highest point 530 feet above the level of the rivers, and which formed originally a natural barrier to the extension of the city into what we now term the "East End" division.

The old city contains an area 2.1 square miles and a population of 70,000. Its topography is very irregular, there being little or no level or marshy ground.

It is admirably located for drainage. Perhaps it was on account of these natural advantages that during many years of its history no systematic plan of sewerage was devised and constructed to meet the requirements of its increasing population. A rigid economy seems to have been exercised in this direction, for the reason, perhaps, that its topography necessitated the expenditure of large sums for grading its streets, heavy cutting and filling being required to a much greater extent perhaps than in any other city in the country.

The sewers have almost all been constructed within the last 25 years, having been gradually extended as the property became sufficiently valuable to pay the assessments levied for their construction. It is the old, or "combination system," the separate system devised by Col. Waring not yet having been introduced even as an experiment. The absence of sewers during all these years necessitated, of course, the construction of cess-pools, and it is no exaggeration to say that the number is only limited to the number of houses.

It is true that where sewers have been constructed many of them have been abandoned, emptied and filled up; but they still exist in sufficient number to be a constant menace to the public health.

*Presented to the State Sanitary Convention.

The Old City contains 45.04 miles of paved and 4.47 miles of unpaved streets.

The streets are kept as clean, by means of scraping and washing, as is possible in a city where garbage is left to be disposed of by each individual or family, the result of which is, that it is thrown into cellars, cess-pools, yards, alleys, and even upon the public thoroughfares. Some of it is hauled about the streets until finally what remains in the open cart or wagon, is deposited upon some vacant lot.

By reason of its excellent natural drainage, the fact that so much of its surface is paved, and that but few if any wells or springs are used or exist within its limits, the Old City although the most densely populated, exhibits a lower death-rate from preventable diseases than the Southside, or even the East End, if we exclude the sparsely populated country districts.

"EAST END."

The district known as the East End comprises the 13th to the 23d wards inclusive, and covers an area of 21.96 square miles, much of which is but thinly populated farming country. It contains a population of 77,000. The portion which particularly concerns us from a sanitary standpoint is the plateau on which are located East Liberty, Shady-side, Bloomfield, Bellefield, Oakland and Homewood. This plateau, geologists tell us, was formerly the bed of the Monongahela river, at an epoch when its prism occupied a plane 200 feet above its present elevation. Large portions of it are level and marshy, and it is practically without drainage or sewerage; water stands in many of the cellars, and the cess-pools overflow. Even the densely built up portions, are obliged to rely solely for drainage upon open ditches, which usually debouche into swamps in vacant lots.

This district contains 55.45 miles of paved, and 170.89 miles of unpaved streets.

Its sanitary condition is bad, the great need being drainage and sewerage. This would probably be a good locality in which to test the merits of the separate system as devised by Col. Waring.

"SOUTHSIDE."

The Southside comprises the 24th to the 36th wards inclusive. It lies along the south banks of the Monongahela and Ohio rivers, contains an area of 5.22 square miles and a population of 56,000. More than one-half of its total area lies upon the top or slopes of a precipitous range of hills, the base of which approaches, through a portion of its extent, almost to the river edge.

The greater portion of the population is located upon the crescent shaped bottom known originally before incorporation as the borough of Birmingham, etc. Here fully 30,000 people are crowded upon 700 acres. This locality is but illy provided with drainage and sewerage, although at no point is the Monongahela river more than one-half mile distant from the base of the hills. Of the 700 acres included in this portion, more than 100 acres are built over made ground, formed by the deposit of ashes, chiefly from glass manufactories, largely mixed with street scrapings, and general garbage. The depth of this deposit varies from 3 to 20 feet. In recent years, this district has been visited with epidemics of diphtheria and typhoid fever.

The Southside contains 23.83 miles of paved, and 52.04 miles of unpaved streets.

The sanitary conditions of the populous portions is not good, through lack of proper drainage and sewerage, and also many wells continue to be used.

GENERAL CONDITION.

While the City of Pittsburg as a whole, exhibits a creditably low death-rate from preventable diseases, this is mainly due to the fact that much of it is rural, and

that much of the densely populated portion, notably the Old City, is exceptionally favorably located as regards drainage. The per centage of deaths from preventable diseases on the total mortality in each of the *three* divisions of the City for the past ten years, was as follows :

Old City,	-	-	-	22.0
East End,	-	-	-	23.6
Southside,	-	-	-	31.8

The Old City contains 33,000 inhabitants to the square mile, the East End, 3,000 and the Southside, 10,000. Notwithstanding this great difference in density of population the Old City compares almost equally well with the East End, and presents a much more favorable exhibit than the Southside.

WATER SUPPLY.

The water supply of the Old City and East End, as shown by chemical analysis, is excellent. It is obtained from a point in the Allegheny river several miles above the populous portions of the City. It is sufficiently clear as not to necessitate the use of filters, the reservoir capacity being sufficient to allow settling. For this reason, citizens where city water is furnished, are not prompted (as upon the Southside), to resort to wells and springs in order to obtain clear water. The works are capable of supplying 45,000,000 gallons daily. The daily consumption is 23,000,000 gallons.

The Southside is supplied by a private corporation, with water from the Monongahela river. This water although possessing a high degree of purity, chemically, is, for lack of sufficient reservoir capacity, furnished the city in a condition so muddy that the citizens often resort to wells and springs in order to obtain the clear but dangerous water furnished by them. This is particularly the case when the river is high and muddy as during the spring floods. Epidemics of typhoid fever have been unerringly traced to this

source. Many of these wells and springs have been condemned, and their use abandoned. Efforts are now being made to introduce the city water supply to the Southside, which if successful will effectually remedy this sanitary defect.

INFECTIOUS DISEASES.

Physicians are required by law to report to the Health Department all cases of *smallpox, diphtheria, scarlet fever, typhoid fever, typhus fever, yellow fever, cerebro spinal fever* or *asiatic cholera* which may come under their care, giving the residence (street, number etc.), of patients.

Bulletins containing a list of cases of SMALLPOX, SCARLET FEVER, and DIPHTHERIA, with the location of the same, are sent daily to all the schools in the city, both public and private. School authorities are required to prohibit the attendance of pupils from infected families or houses, until 30 days have elapsed after the convalescence or death of the persons so affected, this to be certified to by the attending physician. Pupils are also required to present a certificate of thorough vaccination before being admitted to any of the schools.

NEEDED SANITARY REQUIREMENTS.

The most needed sanitary requirement in our city, is the systematic removal of garbage. This subject has already been alluded to in speaking of the Old City.

The Health Department has labored earnestly for years in this direction, and it was hoped that in view of the impending cholera invasion the City Councils could have been induced to furnish the Health Department with the funds necessary to put it in successful operation. By no other plan, can cellars, cess-pools, yards, alleys, and vacant lots be kept clean. Washing the main thoroughfares will not reach the points where sanitary work is most needed.

During 1885 a thorough and systematic sanitary survey of all the houses in the city was made by the Health Department. This important work is being continued during the present year, special attention being given to the condition of cellars, yards and privies.

INSPECTION OF FOOD.

The Health Department intrusts the inspection of meat, milk, and other perishable foods to one individual. This work is too extensive for a single official, no matter how competent or energetic he may be, to successfully carry out. It is simply impossible for him to exercise a constant supervision over the 100 slaughter-houses scattered throughout the city, and attend to other duties in addition. Vigorous efforts are now being made for the establishment of an "abbatoir" at or near the central stock yards, for the slaughter of crippled, and disabled animals. This if successfully accomplished will greatly facilitate the proper inspection of meats, but should be supplemented by the establishment of additional general slaughtering houses, and the abolition of the smaller ones, many of which are, on account of location, and manner of construction, nuisances of the worst character.

HOSPITAL ACCOMODATIONS.

It may be a matter of surprise to the world outside to know that the large and wealthy City of Pittsburg contains no hospital accomodations (other than private) excepting the building under control of the Health Department, devoted to the use of smallpox patients. During the last epidemic of smallpox, a new addition was built to the old structure, which was not completed until near the subsidence of the disease, and consequently has never been used for the care of smallpox patients. This building capable of accomodating thirty, is all the city

will possess for the care of patients in case of emergency, arising from the advent of cholera.

BEECHER'S LAST WORDS.

YOUTHFUL DISSIPATIONS AND THEIR EFFECT UPON YOUNG MEN AND WOMEN.

The following article, from the pen of the late Henry Ward Beecher, was written by him only a fortnight previous to his death, and was published in the *Brooklyn Magazine* for April:—

"Old age has the foundation of its joy or its sorrow laid in youth. Every stone laid in the foundation takes hold of every stone in the wall up to the very eaves of the building; and every deed, right or wrong, that transpires in youth reaches forward and has a relation to all the after part of man's life. A man's life is not like the contiguous cells in a bee's honey-comb; it is more like the separate parts of a plant which unfolds out of itself, every part bearing relation to all that antecede. That which one does in the youth is the root, and all the afterparts, middle age and old age, are the branches and the fruits, whose character the root will determine.

"Every man belongs to an economy in which he has a right to calculate, or his friends for him, on 80 years as a fair term of life. His body is placed in a world adapted to nourish and protect it. Nature is congenial. There are elements enough of mischief in it if a man pleases to find them out. A man can wear his body out as quickly as he pleases, destroy it if he will; but, after all, the great laws of nature are nourishing laws, and, comprehensively regarded, nature is the universal nurse, the universal physician of our race, guarding us against evil, warning us of it by incipient pains, setting up signals of danger—not outwardly, but

inwardly—and cautioning us by sorrows and by pains for our benefit.

IMMODERATE PASSIONS.

“Every immoderate draft which is made by the appetites and passions is so much sent forward to be cashed in old age. We may sin at one end, but God takes it off at the other. Every man has stored up for him some eighty years, if he knows how to keep them, and those eighty years, like a bank of deposit, are full of treasures; but youth, through ignorance or through immoderate passions, is wont continually to draw checks on old age. Men do not suppose that they are doing it, although told that the wicked shall not live out half their days.

“Men are accustomed to look upon the excesses of youth as something that belongs to that time. They say that of course the young, like colts unbridled, will disport themselves. There is no harm in colts disporting themselves, but a colt never gets drunk. I do not object to any amount of gaiety or vivacity that lies within the bounds of reason or of health; but I do reject and abhor, as worthy to be stigmatized as dishonorable and unmanly, every such course in youth as takes away strength, vigor and purity from old age. Every man that transcends nature’s laws in youth is taking beforehand those treasures that are stored up for his old age; he is taking the food that should have been his sustenance in old age, and exhausting it in riotous living in his youth. Mere gaiety and exhilaration are wholesome; they violate no law, moral or physical.

EXCESS IN YOUTH.

“I do not object to mirth or gaiety, but I do object to any man’s making an animal of himself by living for the gratification of his own animal passions. People frequently think to require in the conduct of youth that which we expect in later life has something of Puritanism in

it. Men have an impression that youth is very much like wine, crude and insipid until it has fermented, but when it has fermented, and thrown down the lees, and the scum has been drawn off, the great body between is sound and wholesome, and beautiful.

“I am not one that thinks so.

“I think that youth is the beginning of the plant life, and that every wart or excrescence is so much enfeeblement of its fruit-bearing power. I do not believe that any man is the better for having learned the whole career of drunkenness or of lust, or the dallies or indulgences that belong to a morbid life. A young man that has gone through these things may be saved at last; but in after life he has not the sensibility, nor the purity, nor the moral stamina that he ought to have. He has gone through an experience but for which his manhood would have been both stronger and nobler. Excess in youth, in regard to animal indulgences, is bankruptcy in old age.

“For this reason I deprecate late hours, irregular hours or irregular sleep. People ask me frequently, ‘Do you think there is any harm in dancing?’ No, I do not. There is much good in it. ‘Do you, then, object to dancing parties?’ No; in themselves I do not. But where unknit youth, unripe muscle, unsettled and unhardened nerves are put through an excess of excitement, treated with stimulants, fed irregularly and with unwholesome food, surrounded with gaiety which is excessive and which is protracted through hours when they should be asleep, I do object.

NO HARM IN DANCING.

“The harm is not in the dancing itself; for if they danced as do the peasants, in the open air, upon the grass under the trees and in the day, it might be commended, not as virtuous, but as

still belonging to those negative things that may be beautiful. But the wassail in the night, the wastefulness—I will not say of precious hours, for hours are not half so precious as nerves are—the dissipation, continued night after night and week after week through the whole season, it is this I deprecate as eating out the very life. I am not superstitious of observances, but I am always thankful that there are forty days of Lent in the year when folks can rest from their debauches and dissipations; when no round of excessive excitement in the pursuit of pleasure is permitted to come in and ruin the health and cripple the natural powers of the young.

“The appetites of youth, which either in social or in solitary life drain down the vitality and impair the constitution, are so many insidious assaults on old age. I would that the young knew how clearly these things are written. God’s handwriting is very plain and very legible to those who have eyes to see. There is not an intelligent physician that does not read, as he walks through the street, the secret history of the lives of those whom he meets, and that, too, without following them in their midnight career. I care not to have men come to me and state their secret courses; I can read it in the skin and in the eye.

THE LANGUAGE OF THE PASSIONS.

“There is not one single appetite of passion that has not its natural language, and every undue indulgence of that appetite or passion leaves that natural language more or less stamped upon the skin, upon the features, upon the expression of the face or the carriage of the body.

“There is always some token that tells what men are doing, if they are doing anything to excess.

“Pride has its natural language; mirthfulness has; goodness has. Nobody doubts this.

“So have the passions their natural language.

“Men think that if they commit their wickedness in secret places or in the night that it is not known. It is known, although no man may ever say to them: ‘Thou art guilty.’

“The use of stimulants in youth is another detraction from happiness in old age. Men usually take what they least need. In other words, we follow our strongest faculties and not our weaker ones, and, therefore, if men are excessively nervous, they almost invariably seek to make themselves more so.

“I rejoice to say that I was brought up from my youth to abstain from tobacco. In rare cases, where there is already some unhealthy or morbid tendency in the system, it is possible that it may be used with some benefit, but, ordinarily, it is unhealthy.

“I believe that the day will come when a young man will be proud of not being addicted to the use of stimulants of any kind.

“I believe that the day will come when not to drink, when not to use tobacco, not to waste one’s strength in the secret indulgence of passions, but to be true to one’s nature, true to God’s law, to be sound, robust, cheerful, and to be conscious that these elements of health and strength are derived from the reverent obedience of the commandments of God, will be a matter of ambition and endeavor among men.” HENRY WARD BEECHER.

ABOLITION OF QUARANTINE IN CONSTANTINOPLE.

The Sanitary Board of Constantinople has decided (says the *Brit. Med. Journ.*) with the sanction of the Porte, to suppress quarantine on all arrivals by land or sea, and substitute a medical inspection in its stead.

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Editorial.

CHOLERA.

It would seem that we have now more reason to fear the advent of cholera than at any previous period since the commencement of the present epidemic. Hitherto we have been separated from the disease by several thousands of miles of water, and as the only way for it to come amongst us was through some port of entry, it was a comparatively easy matter for an even fairly good quarantine to keep it out. But, now the case is very different. During this winter the disease has been slowly creeping up the American Continent; it is really on our shores, and it is therefore difficult to understand how any system of quarantine can keep it away from us. The *New Orleans Medical & Surgical Journal*, for the current month, says:

"Step by step the cholera is creeping through South America, gathering force as it marches. Beginning in Buenos Ayres, by the latter part of December it had crossed the Argentine Republic and gained foothold in Chili. A telegram

from Panama, dated March 9th,* tells us of its ravage: in that State, and we may catch a hint of their extent from the fact that it has already been proposed that 'the nation concede a pension to the families of all who may die attending cholera patients.' The same authority informs us that the people of the Isthmus are growing alarmed, and that vessels from Uruguay, the Argentine Republic, Chili and Peru are not allowed to enter the ports of Nicaragua, Honduras or Panama. These are serious signs, and matters of import to other cities than New Orleans, and other States besides Louisiana. For should the plague reach the Isthmus and Mexico, there will be small hope of this city escaping, and the flood-gates of New Orleans once passed, the Mississippi Valley, and indeed the whole country, may be inundated with disease before there is time to realize the danger. In the meantime the great Southern city is lying flat out on its mud-bank, listlessly watching the advance of the scourge. Her citizens are doing nothing to put their houses in order. The Auxiliary Sanitary Association is without money. The City Council in the same breath gives \$11,000 to maintain a small-pox hospital! and refuses to vote a penny towards the expenses of running the flushing pumps, our first infantile steps in the direction of municipal sanitation. The Howard Association has dwindled to a spark, while our chapter of the Red Cross Association is practically lifeless.

It is true that our river mouth is guarded by the best quarantine system we have ever known, but it must be borne in mind that this is as yet an experiment only; an experiment so far successful, but till now never put to a crucial test, and that the quarantines of the world have failed to bar the path of cholera.

But with Gallic lightness we still squander to-day the resources which should secure the morrow, and to morrow—to-morrow, who knows, we may be cursing Fate and mourning our dead."

Of course, it is obvious that it will be utterly impossible to prevent the northward transmission of the disease, unless all communication is absolutely barred

* Daily Picayune, March 19th.

between the various countries, which we must all concede to be an impracticability. While, therefore, we should not be willing to venture an absolute prediction that cholera is coming (though we gravely fear it), yet we would recommend that we should assume its expected presence and prepare accordingly. In our city, the new administration is rapidly causing to disappear the accumulation of dirt that has rendered our streets a favorable culture medium for the cholera germ, and this is a step in the right direction. Let all our cities and towns clean up, and do so *without delay*. Let our citizens look to it that their houses are in proper sanitary condition. The late Health Officer of Philadelphia, Major Moses Veale, just prior to his retirement from office, made the recommendation that regular, systematic house-to-house inspections (similar to the inspection made two years ago, when we had a cholera scare), should be made annually; a most admirable suggestion, but, since it appeals to the better sense of the community, a suggestion that will be unheeded. Do not allow the accumulation of decaying vegetables in your cellars; go look at your cellars and note their condition and you will be much surprised. We venture to say that very few house-keepers ever enter the cellar, it is a *terra incognita* to all save the cook; and we do not fear contradiction when we say that the cellars of the majority of our houses are disease-breeding places, from which, through the medium of the warmer air of the upper portion of the house, the poison is disseminated to our living rooms. If you want good health your cellar should be as clean as your parlor. Then clean your streets, and clean (and keep clean) your houses. For the individual, there are certain precautions which would seem to confer an absolute immunity from cholera. When the disease was raging in Naples, it

will be remembered how the whole civilized world applauded the heroism of King Humbert, when, taking his life in his hands, as it was supposed, he went boldly among his afflicted people. But, without wishing to detract from the fame which he thus gained, science compels us to say that he did not take his *life in his hands*; because he took his provisions with him from Rome in hermetically sealed cans, and he scrupulously avoided the consumption of anything that had been exposed to the possibility of infection in the infected city of Naples. The King was also aware of the fact that if the germ of cholera does enter a stomach that is healthy, that its potency for evil is destroyed, hence he was careful that his stomach was maintained in a healthy condition. With these simple precautions, he went boldly and fearlessly into the most infected districts, because he knew that he enjoyed a positive immunity. If the cholera comes among us, we will remove our families to an isolated farm house, where the spring water we drink cannot be contaminated, and we will make it our business to know all about where the provisions we eat were procured. We will come fearlessly to the city, as business may call us, but we will be very sure only to eat and drink that which we know is above reproach. Let us hope that the disease will not come; but let us, in time, urge upon our authorities to clean up, so that it may not find a welcome if it does come; and while we should not get *scared*, let us still remember that it is more than likely that we will have a visitation, and let us be well prepared to resist it.

— ♦ ♦ ♦ —

"WHAT FOOLS WE MORTALS BE."

—

Puck's motto is very applicable to the present unreasoning, unsound, senseless and worthless craze in reference to the treatment of consumption. When we

first heard of this new idea it struck us as a joke, but we soon found that serious physicians were actually inserting tubes into the rectums of their poor victims and injecting sulphuretted hydrogen gas and really believing that they were doing good. The lay press has taken up the subject, and it is actually stated that the demand for this new apparatus is so great that the supply is inadequate. Were the question involved less serious we could smile at the credulity of these people, as it is, it is a matter of serious moment. Any thoughtful man who knows that nearly every drug in the *materia medica* has been at one time or another tried ineffectually for the cure of this disease, must have come to the conclusion that consumption never can be cured by drugs; it is folly to hope for it.

But, wherein the folly of mortals is found, is in the fact that while drugs will not cure, an *open air life* will cure whenever a cure is possible. This we know and have long known, yet, so perverse is human nature, that it will pay little heed to this truth, yet at the same time will spend its money to buy an apparatus by which to put into the bowels the most offensive of all gases; a gas of which the late Dr. Rogers, formerly Professor of Chemistry in the University of Pennsylvania, used to say: "Of all the smells I ever smelt, I never smelt a smell smell like that smell smells." Let us have done with such nonsense. It will be but a short time before the public will be holding us up to ridicule; indeed this new treatment is well worthy of a cartoon in the pages of *Puck*.

THEY DO INDEED LOOK SEEDY.

It is noted of the young men who go out in the evening to sow some wild oats, that they always look "seedy" in the morning.

Notes and Comments.

HEALTH IN MICHIGAN, MARCH, 1887.

Reports to the State Board of Health, Lansing, by regular observers in different parts of the State, show the diseases which caused most sickness in Michigan during the month of March (five weeks ending April 2), 1887, as follows:

Diseases arranged in order of greatest prevalence.	Number of reports received, 234.		For preceding month.
	Per cent. of Reports stat- ing presence of disease.		Per cent. of reports stat- ing presence of disease.
Rheumatism, . . .	80		75
Neuralgia, . . .	76		75
Bronchitis, . . .	67		71
Tonsillitis, . . .	65		58
Consumpt'n of Lungs,	60		53
Influenza, . . .	50		51
Intermittent Fever,	48		42
Pneumonia, . . .	45		47
Erysipelas, . . .	39		28
Diarrhœa, . . .	33		35
Measles, . . .	30		19
Inflammation of Kid- ney, . . .	24		22
Remittent Fever, . .	24		19
Inflam'at'n of Bowels,	18		16
Tonsillitis, . . .	13		17
Diphtheria, . . .	12		10
Typho-malarial Fever,	11		11
Scarlet Fever, . . .	11		9
Dysentery, . . .	11		10
Inflammation of Brain,	7		7
Typ'd Fever (enteric),	7		9
Puerperal Fever, . .	7		5
Membranous Croup,	5		4
Cholera Morbus, . . .	3		1
Cholera Infantum, . .	1		1
Cerebro-spinal Menin- gitis, . . .	1		3

For the month of March, 1887, compared with the preceding month the reports indicate that erysipelas, measles, tonsillitis and consumption of lungs increased in prevalence.

Compared with the preceding month, the temperature in the month of March, 1887, was slightly higher, the absolute

humidity and the day ozone were about the same; the relative humidity and the night ozone were less.

Compared with the average for the month of March in the nine years, 1879-1887, measles and erysipelas were more prevalent, and remittent fever, intermittent fever, pneumonia, scarlet fever, influenza, bronchitis and diphtheria were less prevalent in March, 1887.

For the month of March, 1887, compared with the average of corresponding months for the nine years, 1879-1887, the temperature was lower, the absolute humidity and the day ozone were about the same, the night ozone slightly less.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of March, 1887, at forty-six places, scarlet fever at fifty-two places, typhoid fever at thirteen places, and measles at thirty-five places.

Reports from all sources show diphtheria reported at twelve places more, scarlet fever at ten places more, typhoid fever at three places less, and measles at eleven places more in the month of March, 1887, than in the preceding month.

HENRY B. BAKER,

Lansing, April 7, 1887. Secretary.

NEW INSTRUCTIONS TO PUBLIC VACCINATORS.

The Local Government Board of England, have issued new instructions to public vaccinators, to supersede those of sixteen years ago. The alterations, which are wisely conceived, relate specially to ensuring the better performance of the operation of vaccination, and to the avoidance of septic poisoning. For the former, it is ordered that the insertions of lymph shall be such that the total area of vesiculation on the same day in the week following the vaccination should be not less than half a square inch; for the

latter, a caution is given against the use of any means of protection or "shield" that cannot readily be destroyed and replaced whenever it becomes soiled. Public vaccinators are also required to enter in their register the initials of the person operating, and subsequently inspecting the vaccination, and they are cautioned against the employment of lymph supplied by any person who does not keep exact record of its source. It is further required that lymph be not taken from children who have any sort of sore at or about the anus, or from a vesicle around which there is any conspicuous commencement of areola. The caution contained in the superseded instructions not to take under ordinary circumstances more lymph than will suffice for the immediate vaccination of five subjects, or for the charging of seven ivory points, or for the filling of three capillary tubes from such a vesicle as vaccination by puncture commonly produces, is now replaced by the requirement that more than this amount of lymph shall not be taken from a well-formed vesicle of ordinary size except under circumstances of necessity. Lymph, moreover, is not to be taken that has run down the skin, the vesicle is not to be scraped, and the lymph is to be changed if on the day week after vaccination the cases show any conspicuous areola round their vesicles, while formerly the presence of any areola was regarded as reason for omitting to take lymph from such a vesicle. Vaccinating lancets are not to be used for any other purpose whatever, superseding the old instructions, which required that they should not be used for other surgical operations. The instructions end with the advice which experience has shown to be necessary: "Never use any ivory point or capillary tube a second time, either for the conveyance or storage of lymph; but when points or tubes have once been charged with lymph

and put to their proper use, do not fail to break or otherwise destroy them."

DEATH AND BURIAL IN TURKEY.

Emile Julliard, in his article on "Life Beneath the Crescent" in the April *Cosmopolitan*, says:"

If a Turk dies, or looks as if he were dead, no physician, no inspector, comes to make sure that death has really taken place; but if it has not, the fact will soon be established, thanks to a procedure more efficient than all the gentle and refined means in vogue in the West to make sure that the deceased is not hoaxing his heirs.

Scarcely has the last breath been taken when the corpse is lifted up violently by vigorous arms, the clothing snatched off, laid on the flag stones of the mortuary chamber or vestibule, and besprinkled with hot water, which is thrown upon it by the *imam*, provided with a large pail. The sprinkling is repeated two or three times, so that the family runs little danger of seeing the deceased resuscitated.

Thus scalded as a preliminary step, the body is washed and dried. Then it is be-powdered with camphor, and after being covered with a cloth embroidered with verses from the Koran, it is exposed for several hours in the court-yard. Afterwards the *imam* returns, and accompanies the corpse to its last resting-place.

The flat, covered bier is usually carried on the shoulders of friends of the deceased, or upon those of hired pall-bearers. Sometimes strangers assume this duty gratuitously, looking upon it as a pious and meritorious act. The *cortège* is made up only of those that carry the coffin by turns, thus relieving one another without stopping. The coffin is made of cedar, and it is seldom varnished, but it is covered with a rug or a shawl, and there is placed at the head a turban or a fez, if the deceased is a male.

The procession always moves hastily, not for the purpose of getting rid of the dismal burden, but to hasten the moment when the deceased shall enjoy eternal repose; for the Mussulman believes that the soul is restless and unhappy as long as the corpse is unburied. This is why three or four hours only elapse between death and burial.

On arriving at the cemetery, the *imam* so places the bier that the face of the deceased is turned towards Mecca; he then approaches the brink of the grave and utters a very long prayer, the conclusion of which is as follows: "Draw near, Mounkir and Nekir, angels of death and ministers of Allah. Great and blessed God, we humbly beseech thee to make the earth light for thy servant. May he find grace and mercy with thee. Amen."

A Christian's prayer does not say anything more nor any better.

THE MICRO-ORGANISMS OF THE ATMOSPHERE.

In a paper recently read by Dr. Percy Frankland at the Society of Arts, of London, on Some of the Conditions affecting the Distribution of Micro organisms in the Atmosphere, reference was made to Pasteur's experiments as showing that mountain air was comparatively free from organisms. Dr. Tyndall had conclusively shown the comparatively short time required for suspended micro-organisms to subside in calm air. The various methods used to demonstrate the number of living micro-organisms present in a given volume of air, which were only partially successful, were described. Hesse's experiments had brought to light the rapid gravitation of organisms in comparatively still air, and the more rapid gravitation of bacterial organisms than mould-organisms. He (Dr. Frankland) had availed himself of Hesse's method to test the condition of

the atmosphere in London and some country places. At Reigate and in Norwich a smaller number of micro-organisms was observed than in London. In fact, the more remote the place from human habitations, the freer was the air from suspended microbes. The London parks, though containing fewer microbes than were to be found in the streets, contained more than were present in country air. With regard to sea air, experiments showed that the maximum distance to which, under ordinary circumstances, micro-organisms can be transported across the sea lies between 70 and 120 sea miles. Beyond this distance they are almost invariably absent. Dr. Percy Frankland described his system for remedying the defects in Hesse's method of testing the atmosphere. A definite volume of air is drawn, by means of an air-pump, through a short piece of glass tubing containing two small porous plugs placed one in front of the other. Of these two plugs, the first is constructed of glass-wool only, the second being formed of glass-wool and glass or sugar-powder. The object of this arrangement is that the second plug through which the aspirated air has to pass shall offer more resistance than the first, and consequently, if the second plug is found to be free from microbes, it may safely be assumed that the first plug has been sufficiently obstructive to the micro-organisms in the air passing through, and that they have all been retained by it. Each plug is afterwards transferred to a small flask, where the results of the experiment can be examined.

TESTS FOR VISION AMONGST RAILWAY SERVANTS.

The *London Lancet* tells us that the question of the tests that are and should be employed to test the vision of railway servants has been the subject of discussion

at a recent meeting of the engine drivers and firemen of the Gateshead section of the Northeastern Railway. It was acknowledged by the chairman, an engine-driver, that it was essential that railway men should have good sight, but he thought (and several of the speakers agreed with him) that the tests they were put through at present were too severe, and altogether foreign to a railway man's duties. The principal objection seemed to be raised against the use of the dots, and it appears that at a recent examination, out of 1000 men twelve or more were stopped; and, although they had not been turned adrift, they had been placed on wages which had been reduced to the extent of from five to twenty-five shillings per week. One of the speakers, whose wages had been thus reduced, had only one eye perfect, the other being defective. The whole case lies in a nutshell. The lives of the passengers must not, on any consideration, be exposed to unnecessary risk, and undoubtedly to place a train under the care of a one-eyed man is an unnecessary risk. Suppose a spark, or even a fragment of coal-dust lodged on the eye: pain, spasm, and free lacrymation would at once deprive him of all useful vision. The company are therefore perfectly right in replacing a one-eyed man, or a man with defective vision, by one who has two good eyes, especially in an express train, when quickness as well as keenness of sight are required. But the men have, we think, just grounds of complaint that they should have been placed in positions of trust, and advanced from one post to another, and then, when they have done all the drudgery and have secured a good salary, they should be abruptly told that they are unfit for their work. It is the duty of the company and of its officers to see that no man with defective vision is entered upon its staff; but, once admitted, if his sight is found

to fail, he should be pensioned, or supplied with work in which the failure of vision is of relatively small importance. He should not be allowed to be a loser for a piece of carelessness on the part of his employers.

THE PHYSICAL TRAINING OF GIRLS.

It is not uncommon for members of the medical profession to inveigh against the almost world-wide neglect of the important elements of amusement and physical training in girls' schools. That so little has been accomplished in the direction of correcting the evil is probably to be attributed to the fact that those who have treated of the subject publicly have for the most part contented themselves with portraying and condemning the existing state of things, and have made no very definite practicable proposals for remedying it. A striking exception is to be found in an address lately read before the Gloucester Branch of the British Medical Association, by Dr. Rayner W. Batten, senior physician to the Gloucester Infirmary, as we find it published in the *British Medical Journal*. The speaker did not restrict himself to tracing the increased prevalence of anæmia and the like largely to the neglect of girls' physical education, but outlined what seems to be a very practicable and attractive scheme for providing school-girls with a due amount of open-air exercise having the character not of a perfunctory routine, but of wholesome and invigorating sport. He would have at least two half-holidays a week devoted to games played in a large open space, and, in the absence of special reasons to the contrary, every girl required to take part and to wear a suitable costume. He properly lays much stress on the need of varying the games, and justifies the requirement by calling attention to

the lack of symmetrical development in the devotees of any one form of exercise, specifying "the contracted chest and the stoop of a mere cyclist." Among the exercises that he would have practiced are swimming, fencing, cricket, football, fives, and tennis, and such games of speed and endurance as prisoners' base, cross touch, etc. Dr. Batten thinks that the governing bodies of the higher schools should first be led to move in the matter, and he urges that it is the duty of medical men to seek by all means to influence them to do so.

QUARANTINE VAGARIES IN THE RIVER PLATE.

A correspondent who has just returned from Buenos Ayres sends to the *Brit. Med. Jour.* the following facts as to recent quarantine vagaries in the River Plate during the cholera scare:—All mails and passengers from Europe where there was no cholera were put in quarantine, the former being fumigated, and so successfully that in one case thirty sacks were burned off the face of the earth; whereas from the interior, where the cholera was raging, mails, passengers, and goods were allowed to come and go freely. When the disease first broke out, the port of Monte Video was completely closed to Buenos Ayres; consequently, anybody wanting to go to Monte Video, a distance of 150 miles, had to go to Europe and back, a distance of 13,000 miles. I know a case of a man upon whom it was imperative to get to Monte Video, and he had to do that. If I, a stranger, knew of one case, the probability is there were a good many more. At Corrientes, up the Paraguay, they used to send mails and passengers across country about 100 miles to a town where there was a fumigator, and then allow them to come back. In view of the futility of these "precautions," it

is instructive to bear in mind the way in which the cholera was brought into the county. A large Italian steamer called the *Perseo* arrived with nearly 1000 emigrants on board. Under ordinary circumstances, they would have been kept under observation for some days, as there had been a case of sickness resembling cholera on board. But among the first-class passengers was a friend of the President of the Republic, and to please him they allowed all the passengers to land. Most of the emigrants went up to Rosario, where, after a few days, two or three cases of cholera appeared. The disease spread rapidly, and reached its climax in Mendoza, where the deaths were nearly 50 per cent. of the cases.

ASPHYXIA ON DESCENDING INTO WELLS.

At a recent meeting of the Paris Biological Society, M. Gréhan stated that workmen, descending into wells or cess-pools, or going into cellars where the must is fermenting, are suddenly asphyxiated owing either to deficiency of oxygen or excess of carbonic acid. Three men recently perished in that way in a well at Clamart. The first one that went down called for help, and the two others shared his fate in trying to succour him. There is a precaution, pointed out by M. Gréhan several years ago, which would prevent such deplorable accidents. It is only necessary to put in a cage or basket some little animal, such as a rabbit, a guinea-pig, or a bird, and lower it into the well by means of a cord, allowing it to remain there for an hour or so. If, on pulling up the cage, the animal is found to have suffered no inconvenience from its sojourn below, the workmen may go down without fear; but, if the animal be dead, then the air in the well must be renewed, and no one should go down until a fresh experi-

ment gives a satisfactory result. As it is not an easy matter to renew the air in a well, the following directions may be found of use. A stovepipe, three or four mètres longer than the depth of the well, is firmly fixed in the axis of the well by means of wires. At the level of the surface, a circular grate is placed around this pipe. A second pipe of greater diameter is then slipped over the first, and allowed to rest on the outer edge of the grate. A fire is then lighted, which heats the inner pipe, and a draught is caused which draws the vitiated air from the bottom of the well. It is necessary to heat the air in the inner pipe from the outside, as otherwise the gases from the well might put out the fire.

TYPHUS AND OVERCROWDING.

Dr. Russell, the medical officer of health of Glasgow, has presented to his authority a report giving an interesting account of the behavior of typhus in an overcrowded house. This house consists of three rooms, and is situated at the end of a new street close to open fields. The stair is well lighted and airy, and the inmates cleanly and apparently respectable Scotch people. Altogether sixteen people lived there, but two of these being children, they may, for the purpose of estimating cubic space, be regarded as equal to one adult. On this assumption there were for each of the fifteen adults an average of only 199 cubic feet of air space: in the kitchen, for each of three adults, there were 188 cubic feet; in the parlor, for each of seven adults, 180 cubic feet; and in the third room, for each of five adults, 116 cubic feet. Typhus fever attacked two in the kitchen, three in the parlor, and four in the third room. How the disease was introduced is unknown, but, as Dr. Russell said, "a household living under these physical circumstances

is like a barrel of gunpowder: only a spark is required—a chance contact with any wandering source of infection.” The story is instructive, for it shows very definitely the relation between overcrowding and typhus fever, and that nothing but the watchfulness of local authorities and their officers will prevent the development of a fatal disease. In the present case the sick were removed to hospital and the rest of the household to the House of Reception, thus limiting a further spread of the malady.

SIMPLE TEST FOR WALL-PAPER.

The *British Medical Journal* says that a simple and easily-applied test for wall-papers has been devised by Mr. F. F. Grensted. No apparatus is needed beyond an ordinary gas-jet, which is turned down to quite a pin-point, until the flame is wholly blue; when this has been done, a strip of the paper suspected to contain arsenic is cut one-sixteenth of an inch wide, and an inch or two long. Directly the edge of this paper is brought into contact with the outer edge of the gas-flame a grey coloration, due to arsenic, will be seen in the flame (test No. 1). The paper is burned a little, and the fumes that are given off will be found to have a strong, garlic-like odor, due to the vapor of arsenic acid (test No. 2). Take the paper away from the flame, and look at the charred end—the carbon will be colored, this is a copper reduced by the carbon (test No. 3); being now away from the flame in a fine state of division, the copper is slightly oxydized by the air, and on placing the charred end a second time, not too far into the flame, the flame will now be colored green by copper (test No. 4). By this simple means it is possible to form an opinion, without apparatus and without leaving the room, as to whether any wall-paper

contains arsenic, for copper arseniate is commonly used in preparing wall-papers. Tests 1 and 2 would be yielded by any paper containing arsenic in considerable quantities.

VEGETARIAN *v.* MIXED DIET.

It is more than doubtful whether the principle of vegetarianism will ever constitute the prevailing rule of diet. A variety of arguments have certainly been urged in its support, and the names of some who advocate its adoption are by no means undistinguished. While, however, we are quite willing to acknowledge whatever merit can justly be claimed for this system, we cannot see that it has any claim to recognition as a practice well suited to the various requirements of mankind in regard to food. That subsistence and a fair degree of nutrition are compatible with the exclusive use of vegetables we do not deny. Nay, we regard it as indisputable that some constitutional conditions agree better with a sparing use of animal food, or even with a diet from which it is quite excluded, than if they were treated to an ordinary mixed diet. To this class we may allot the great majority of young children, though for such we should rather advise a very limited allowance of meat than its total substitution by vegetables. After all has been said that can be said, however, in favor of vegetarianism, we have no hesitation in expressing our own conviction that the great mass of adult and adolescent men and women do, and can, best nourish themselves by choosing much of the proteid and fatty ingredients of their food from the animal world.

POISONING FROM EATING LIVER.

Dr. Carl Lohmeyer, in a learned article in the *Berliner klinischer Wochenschrift*

of January 24th, describes the results of eating the apparently healthy liver of a calf. Very few cases of liver-poisoning have ever been reported, and hence this has some special interest. A certain family obtained the liver and other meat from calf killed the same day. The liver was salted and put in a cool place; next day it was cooked and eaten at a mid-day meal. The nine persons who partook of it were taken ill very soon afterward. The symptoms were those in the main of cholera nostras. There was also with the profuse diarrhoea a great deal of vertigo, injection of the conjunctiva, and reddening of the face and neck. All the patients recovered in a few days. Investigation showed that the liver was yellower than normal and injected with bile; microscopic examination revealed evidence of an acute hepatitis, just beginning. Tests made by inoculation and feeding failed to give any results upon other animals. There was no evidence of putridity, and other portions of the same animal were eaten with impunity.

The meal which was eaten had been cooked for a long time, and hence any micro-organisms must have been either killed or had their vital energies so reduced as to be innocuous. The result of the study of this case, therefore, led to the conclusion that the symptoms were produced by a septic, chemical virus, which might itself have been the product of micro-organic life.

Cases in which the liver of young animals is diseased in the way discovered by Lohmeyer are very rare, but some instances have been reported.

WHY NO APPROPRIATION WAS MADE FOR THE SMALL-POX HOSPITAL.

It is a fact greatly to the credit of the late Health Officer of this city, Major

Veale, that during 1886 there was not one patient in our Small-pox Hospital. But when this official went before Councils with his itemized appropriation bill for 1887, the fact of this immunity was used as an argument why an appropriation should not be made for the support of the Small-pox Hospital, because, said a member of Councils, when you have no patients, what is the use of a hospital. When I visit my guard-house, said the colonel of a regiment, and find it full, I know that my captains and lieutenants are inefficient; if it is empty, I have good discipline in my command. It was because of the efficiency of the Health Officer that the Small-pox Hospital was empty, yet it was actually argued that because of this very efficiency his hands should be so tied (for lack of appropriation) that his efforts would, in the future, be rendered ineffectual. This process of reasoning is very common when sanitary questions are involved. This State Board of Health is awarded the crushingly munificent appropriation of \$5,000 annually, and we venture to say that if cholera comes here this summer, there will be many to say, "Of what use is this Board, we created them and we gave them money, yet they allowed the cholera to reach us." What can they expect us to do with such an appropriation?

NO TENEMENT HOUSES IN PHILADELPHIA.

It is a well known fact that the death-rate of Philadelphia is remarkably low, lower than almost any other large city in the world, and this in spite of the fact that we have several insanitary conditions to contend with, such as want of efficient sewerage and not the best of water. But, there is one thing that we do have, not possessed, in the same degree, by any other city in this country, and it is a most

important feature in the promotion of good health. We refer to the fact that owing to the large number of houses in our city, there is very little of the overcrowding so common in other cities, particularly in New York, and, as a consequence, our people have more air space in their houses and consequently more uncontaminated air to breathe.

A statement prepared by the United States Census Commissioners in the year 1880, as to the number of dwellings and the number of persons to each dwelling in different cities gives the following:

	Dwellings.	Persons to each dwelling.
Philadelphia, . .	146,412	5.79
New Orleans, . .	36,347	5.95
Baltimore, . .	50,833	6.54
San Francisco, . .	34,110	6.86
St. Louis, . .	43,026	8.15
Chicago, . .	61,069	8.24
Boston, . .	43,944	8.26
Brooklyn, . .	62,233	9.11
Cincinnati, . .	28,017	9.11
New York, . .	73,684	16.37

INTERNATIONAL HEALTH CONGRESS AT VIENNA.

The Executive Committee of the Sixth International Health Congress, which is to be held at Vienna from September 26 to October 1, 1887, has already issued its preliminary programme. The Congress is under the patronage of the Hereditary Prince of Austria, and the following are honorary presidents: The Ministers Taaffe and Guatsch, Statthalter Possinger, Landmarschall Kinsky, and the Bürgermeister of Vienna, Herr Uhl. The president of the Congress is Hofrath Professor Schneider. The council consists of the vice-presidents, Hofrath von Tuama, Professors Böhm, E. von Hofmann, and many other notabilities. The subscription of each member of the Congress is ten florins. Each member who announces two months beforehand his intention of

taking part in the Congress, will receive a copy of the reports (*Expositions-referate*) which appear before the meeting of the Congress, and also a copy of the general report, which will be published afterward. At the two general meetings only lectures will be delivered; at the sectional meetings there will be discussions of the reports. Papers which have already been published, and which have already been read before scientific societies, will not be received.

HEALTH STATISTICS OF CAPE TOWN.

Dr. Fisk, the sanitary officer for Cape Town (says the *Brit. Med. Jour.*) has just presented to the Town Council his report for 1886. The number of known deaths during last year in Cape Town was 1163. This, in a population of 45,000—an estimate allowing for an increase of 11,000 since the census was taken, twelve years ago—is at the rate of 25.8 per 1000 per annum. This high rate, in the absence of any severe epidemic, is 5.6 less than in the previous year, when it was 31.4. The comparatively low death-rate among the Malay population is somewhat surprising, only 265 out of the 1163 deaths which took place during the year being Malays. The Malay death-rate was 17.6 per 1000, thus raising the death rate of the non-Malay population to about 30 per 1000, the Malay population of Cape Town being estimated at 15,000, or one-third of the total population. Against the 1163 deaths there are to be placed 1143 births. In the previous year the births were 169 fewer, and the death-rate was much higher. The mortality among very young children is excessive, 558 children, of whom 274 were colored, dying in 1886. Poverty, bad hygiene, and insanitary surroundings, are of course the main causes of this infantile mortality.

TO CLEAN WOOLENS.

Experiments made in Germany on the best method of cleaning woollens have led to the following conclusions: First, the liquid used for washing must be as hot as possible; second, for the removal of greasy dirt, sweat, etc., borax is of so little value that its application would be mere waste, and though soap lye is better, the preference must be given to soap lye along with ammonia, a mixture which works wonders by quickly dissolving dirt in particular parts which are hard to cleanse, raising and reviving even bright colors; third, that on the other hand for cleaning white woollen goods there is nothing which even approaches borax—soap lye and borax applied boiling hot give to white woollens a looseness and a dazzling whiteness which they often do not possess when they are new; fourth, if shrinking is to be entirely avoided the drying must be accelerated by repeatedly pressing the woollens between soft cloths. In no case should the woollens be dried in the sun, as they become dry and hard, they being best dried in a moderate current of air, and in cold weather in a warm place, but not too near the source of heat. In the above experiments all the various degrees of heat were tried from the hottest to the coolest temperature; all the favorite cleaning materials were also employed—soap, borax, ammonia, benzine, and mixtures of these.

PUBLIC HEALTH IN THEATRES.

The unhealthy effects of the late hours and foul air of the average theatre are very generally admitted, and it cannot be denied that the hygienic condition of theatres during a performance is such as to cause at any rate a passing disturbance of the comfort and health of the audience. This is not surprising when the ordinary requirements of ventilation are considered

side by side with the difficulty in a crowded theatre of complying with even moderate demands. Even if we concede, however, that certain disadvantages, from a health point of view, are inseparable from an evening spent at the theatre, we are by no means satisfied that even ordinary efforts are made to render the visit as little harmful as possible. Even in theatres of the largest size and importance the most disagreeable smells are to be noticed in the corridors, and even in certain boxes in proximity to the closets and "ladies' rooms." These retreats are, as a rule, unventilated and uncared for, and it is not surprising if neglect results in the unpleasant consequences to which we have alluded. It would not be too much to ask that the closets and urinals should be overhauled, and provision insisted upon for proper flushing and cleanliness.

A MOTHER'S STRANGE HALLUCINATION.

Mrs. Anna Kennedy, wife of John Kennedy, a well-to-do mechanic of Kentucky, has been adjudged a lunatic in the Circuit Court and ordered to the Central Louisville Asylum at Anchorage. Her delusion is a most peculiar one. She insists that her two oldest children, aged eight and six years, have been stolen from her and others substituted in their stead. A few nights ago she took the little fellows to the Central Station and demanded that they be locked up as impostors and her own children found. The astonished officer in charge had her conducted home, where she has since been confined. She reiterated her statements in Court yesterday, saying that a man came to her bedside one night not long ago, and, after blindfolding her, took two of her children away and left two of his own. Equally positive was her denunciation of her husband, to whom she was

married many years ago. Her real husband, she said, had gone away somewhere, and this man was simply loafing about the house.

TIN CANS FOR PRESERVING FOOD.

An ingenious improvement in the manufacture of tin cans for preserving food is being introduced, the plan consisting simply in so forming the lid that it is merely pressed on and the can is hermetically sealed, so that no internal pressure can remove the lid. Water boiled in a tin thus closed has failed to force it off, although the steam pressure has burst the can itself. A penny piece, however, used as a lever by being placed under a rim formed around the top of the cover, with the shoulder of the can as a fulcrum, raises the lid with a remarkably small expenditure of power. The principle involved in the device is that of the wedge and lever. The neck of the tin on which the lid fits is formed at a very slight angle from the vertical, and the rim of the lid is made at a corresponding angle, no solder being used to form the joint. By means of this arrangement, therefore, the opening of cans is rendered a remarkably clean, quick, and simple operation, contrasting greatly in these respects with the inconvenient method of opening now in vogue.

THE STRONGEST MAN IN THE WORLD.

There is a man on the Darson River, below Dayton, Col., named Angela Cordella, who claims to be the strongest man in the world. He is an Italian, aged twenty-eight years, and stands five feet ten inches, weighing 198 pounds. Although not of unusual size, his spinal column is much beyond the ordinary width, and his bones and joints are made

on a similarly large and generous scale. He has lifted a man of 200 pounds with the middle finger of his right hand. The man stood with one foot on the floor, his arm outstretched, his hands grasped by two persons to balance his body. Cordella then stooped and placed the third finger of his right hand under the man's foot, and, with scarcely any perceptible effort, raised him to the height of four feet and deposited him on a table near at hand. Once two powerful men waylaid Cordella, with intent to thrash him, but he seized one in each hand and hammered them together until life was nearly knocked out of them.

BACTERIOLOGICAL LABORATORIES IN SIBERIA AND RUSSIA.

While the Royal College of Surgeons of England is hesitating (says the *Brit. Med. Jour.*) about establishing a bacteriological laboratory in the capital of England, the Medical Society of Irkutsk, the capital of Eastern Siberia, has found no difficulty in adopting a scheme prepared by Dr. Eliashevitch, and a "bacterioscopic station" will soon be in operation in the little Siberian capital, with its 40,000 inhabitants. The Kharkov Medical Society, moreover, has received from the Kursk Government Zemstvo (country assembly) 1,500 roubles (about £150) for establishing a bacteriological laboratory in Kharkov; and, in addition, the Zemstvo promised to give 700 roubles yearly to support the institution. Perhaps these examples may cause some light to break in upon the more than Cimmerian darkness which reigns in Lincoln's Inn Fields.

SULLIVAN AT THE WHITE HOUSE.

The great hero of the public reception at the White House recently was John L. Sullivan. The President was scarcely

noticed. Sullivan was introduced by Pat Sheedy when the line of visitors had passed along to about half its length, and every one crowded up to hear the conversation between the two great men, Sheedy said:

"Mr. President, the reason for our coming to see you is that we heard you were getting a little too much flesh on. We brought Mr. Sullivan up to give you a few rounds and put some Sullivan administration into you."

The President laughed and shook hands heartily with John L. as he said: "How do you do," and then he turned and answered Sheedy, saying: "I don't think I would want more than one blow from him. That would be enough for me."

Then everybody around laughed, whether they heard what had been said or not, and as Sullivan swaggered out, an admiring crowd followed him respectfully to his carriage.

HE GOT THE TAPE-WORM.

Some weeks ago the distinguished scientist, Dr. F. Zschokke, and ten of the students at the Zoological Laboratory, Geneva, undertook a heroic experiment for the purpose of studying the development of tape-worms in the human system, to which end they swallowed the eggs of the repulsive parasite. From every part of Europe they received letters of approbation and encouragement; one single letter only blamed them for having made the dangerous experiment, and this came from the president of a society for the prevention of cruelty to animals! The eggs had been taken from a variety of fishes known or suspected to be the transmitters of tape-worm. For nearly two weeks everything went well; but in the course of the third week the presence of the unpleasant guest manifested itself

plainly with most of the experimentalists. In every instance a complete removal of the parasite was effected, the specimens extracted varying in size—two or three reaching a length of two metres. Doctor Zschokke is about to publish the result of his experiment.

DRY HEAT AND STEAM AS DISINFECTANTS.

At the request of the German Government, Koch and Wothurzel experimented upon the comparative disinfecting value of dry heat and steam. They reported, according to the *British Medical Journal*, that by the direct application of steam at 212° Fahrenheit for from five to ten minutes, even the virulence of dried anthrax blood was destroyed. Earth-spores, which have a reputation for tenacity of life at high temperatures beyond all others, were devitalized by fifteen minutes' exposure to steam, while they resisted the action of dry heat for three or four hours at 302° Fahrenheit.

Dr. Russell, medical officer of Glasgow, says that, during the last ten years, over a million of articles (from persons affected with every kind of contagion known in this country) have passed through the Glasgow laundry, and that he has never known a case of interchanged disease, although the women engaged in the laundry have occasionally suffered from handling the linen before the boiling process.

POLLY'S COFFIN.

A very wealthy foreign lady, well known in some social circles of New York, lost lately by fell disease a parrot, which had greatly endeared himself to her, in fact had, by a timely alarm, once saved her and her husband from a wholesale burglary. She considered Polly's virtues altogether so great as to deserve a valuable

coffin. The coffin is now finished and the bird is now lying in state in it at her house. The coffin, which is as unique as the bird's history, cost \$200, and is made of rosewood, measuring 16 inches by 7x5. It took one man six weeks to make it, and it cost more trouble than a coffin that is worth \$350. It is hand-carved, the designs being Persian, and it is tufted throughout with pink satin. The parrot's head reposes on an embroidered pillow, and a bevel-edged glass protects the bird from contact with the vulgar crowd. The edge of the coffin is decorated by wooden beads fastened in after the coffin was completed. Seventeen golden screws add to the finish of the cover.

SOME POPULAR FALLACIES.

The *Medical Age* says, the following are a few popular fallacies:

1. That a baby should be washed every day.
2. That sitting in the sun will give you chills.
3. That a homœopath gives different medicine from a regular physician.
4. That eruptions on skin from medicine show that the disease is coming out.
5. That a man grows in height in the spring and in bulk in the fall.
6. That scarlatina and scarlet fever are different diseases.
7. That sleeping in the moonlight will make you crazy.
8. That growing flowers are dangerous in the sick-room.

LUTHER AND HIS EARS.

The *Medical Age* tells us that Luther was troubled with whizzing, buzzing, thundering noises in his head. After trying medicine in vain for their relief, he attributed them to visits from the devil. On one occasion they awoke him at night,

and he arose saying "Is it thou devil? Well be it so, I commend myself to God." At another time he said "is it the devil does this? Hark! how the devil is puffing and blowing." His opinion of physicians who tried to heal his infirmity as though it proceeded from natural causes, was that they were ignorant block-heads, knowing nothing about the devil or his works. This rebuke we should regard as complimentary rather than otherwise. Doubtless, the devil is a mischievous and malignant old imp, but science has relieved him of much opprobrium; and had Luther lived and been similarly afflicted in these later days, the doctors would have classified his case as one of Menière's disease.

THE HYGIENE OF OLD AGE.

Many a man of sixty-five to seventy years of age, slightly declining in health, (says the *Telegraph*) would prolong his days and increase his comfort if he were to make a tour of from six months to a year. If he dreads the sea, it is not necessary to go abroad. He can easily be entertained and profited by a journey of that length in his own country—a territory as large as that occupied by the diversified nations of Europe. Many, however, who have the means will go on in the same rut, the harness, which they have worn for threescore years, wearing through the skin in the same place, until finally, like the ancient stage-horse, they will be unable to stand up under the weight of the harness and the shafts, much less pull the load.

THE CAUSES OF WARS.

A well-known French statistician has analyzed these, and arrives at the following conclusions anent them: He limits his inquiries to the last four centuries,

and examines 286 wars in all. Of these, 55 were civil wars; 44 were wars of conquest and land robbery; 41 were wars of succession, or of crown claims; 30 were, as M. Leroy-Beaulieu puts it, wars under pretence of helping allies; 28 were professedly religious wars, but most of these were waged on an old monarchical principle, *Cujus regio, illius religio*; 24 were wars of retaliation; 22 were wars for taxes; 22 were wars of commercial rivalry; 8 were wars on so-called points of honor or prerogative. Among the wickedly capricious causes of the wars of the French monarchs of the seventeenth and eighteenth centuries we find such entries as "A war for a window," and "A war for a glove."

WHAT IS CANNED CHICKEN?

An indiscriminate slaughter of young calves from one hour to three days old, which are shipped to New York, where they are put up as canned chicken, is being carried on quite extensively in this and Herkimer county, says the *Utica Press*. Complaint is also made that an unusually large number is being shipped constantly from Poland, Herkimer county. A well-known authority on the matter writing from that place says: "There are 5,000 young calves from one hour to two days old, shipped from this station every spring, and in the town of Newport, just below, the shipment is equally as great. Recently these farmers who turn up their noses at oleomargarine, commenced shipping 'bobs' by the New York and West Shore Railroad, thus avoiding a landing in New York."

THE REMOVAL OF ASHES AND GARBAGE.

It is announced that the New York City Health Department has resolved to add to the sanitary code the following pro-

visions concerning receptacles for ashes and garbage:

"And no such box, barrel, or tub, before or after it is emptied, shall be placed or permitted to remain upon the sidewalk or in any other public place, but shall be kept within or upon the premises of the person or persons to whom it belongs until removed therefrom for emptying by the authorized employees of the Department of Street Cleaning and by them returned to the place whence it was taken. . . . Such boxes, tubs, or barrels shall be placed or kept at all times in such places as to be readily accessible for removal for emptying and where they shall not be a public nuisance, and no person not for that purpose authorized shall interfere therewith nor with the contents thereof."

THE BIRTH-PLACE OF BEER.

The birth-place of beer is Egypt. A papyrus has been discovered on which a father reproaches his son for lounging about in taverns and drinking too much beer. From the Egyptians the art of brewing beer descended to the Ethiopians. While the Romans despised beer, the Germans of the North of Europe fully appreciated its good qualities. At present the yearly production throughout the whole world amounts to 140,000,000 hectolitres, England taking the lead with 48,000,000. Professor Schwackhofer, of Vienna, thinks that beer fully deserves the designation of liquid bread, as it is undoubtedly nutritious, and less liable to be adulterated than wine.

FRIENDSHIP AMONG BIRDS.

An English lady, residing in the country, has a pet blackbird. Last summer the bird's cage was placed in the open window and a wild blackbird flew down to it, looking through for a minute or two at the prisoner, and then flying away. A

minute afterward the visitor returned bearing a worm in its beak. This act of friendship was repeated again and again, until the caged blackbird and his mistress had to leave. The two birds had been separated for eight months, but recently the lady returned to the country, and had not hung up the cage half an hour before the same wild blackbird was seen flying down to his old friend.

THE PIG AND THE GREENBACKS.

A Western farmer dropped a pocket-book containing \$200 in greenbacks while at work. It was picked up by a pig, which chewed it until it began to taste badly, and then he spit it out in pieces as he trudged along the pasture. All that could be found were sent to the Treasury Department at Washington, where enough remnants were found to entitle the farmer to \$40.

KEROSENE AND DIPHTHERIA.

In a recent epidemic of diphtheria in Hartford, Conn., the fact was noticed that the only fatal cases occurred in families who used kerosene lamps, while the families who used gas or candles to light their sick-rooms escaped a fatal termination. In one case the kerosene lamps were removed from some accident and candles were substituted, and immediately the patient improved until the lamps were reinstated, when he rapidly grew worse and died. The State Board of Health of Connecticut think they have accidentally discovered a very important factor in the dissemination of diphtheria.

NO MEAT IN LENT.

An Albany tramp asked a merchant for ten cents. The merchant replied: "I do not care to give you money, but if you

will step into this restaurant I will pay for a steak and some hot potatoes for you." He was somewhat surprised when the tramp replied: "Well, sir, I don't want the ten cents for virtals. I want to buy a drink. Another thing, you're no gentleman to ask a man to eat meat in Lent. That ain't my religion."

AN ENTERPRISING CLERK.

"James," said the druggist to the new boy, "if you can induce a customer to purchase a quantity of anything by offering him a small discount, you may do so. It is a good business principle, James, to turn your capital often, although the margin of profit is not so large." "Yes, sir," replied James, and the proprietor went out to lunch. On his return he learned, with more or less satisfaction, that intelligent James had induced a customer, who only wanted one two-cent postage-stamp, to buy the entire stock at a cent and a half apiece.

SCORE ONE FOR THE SALVATION ARMY.

A Sedalia, Mo., man recently converted by the Salvation Army, entered a hardware store and asked the proprietor if he remembered what axes were selling for in 1872. "About \$1.00, I guess," was the reply. "Well," said the Salvationist, "I want to give you a dollar, then. In 1872 I stole an axe which was displayed in front of your store."

DISINFECTING STATIONS.

Several disinfecting stations were established in Berlin on November 1st, and their use is compulsory by the police regulations. Within six weeks after their establishment 10,593 pieces were disinfected, mostly belonging to persons infected by diphtheria and scarlatina.

ANOTHER STATE BOARD OF HEALTH.

Nebraska has established a State Board of Health. The new law provides that the Governor shall appoint seven persons, two from each Congressional District, and one at large, with the Governor as their presiding officer. Persons appointed must be graduated physicians, of at least ten years' consecutive practice, and the term of office is to be seven years.

TO LOCATE THE BODY OF A DROWNED PERSON.

In order to locate the body of a man drowned at Abbeyville, Ga., the other day, an old negro took a bundle of fodder and put it in the river where the man first sunk. It floated down about fifty yards and suddenly stopped and commenced to whirl slowly round and round. Here the old negro dived and secured the body. He claims to have recovered four or five other bodies by this means.

BISMARCK AND HIS BRANDY.

It is reported of Bismarck that he took nine glasses of brandy and water, during his recent speech before the Reichstag, in which he declared that that body must either obey his orders, or be dissolved. It didn't obey his orders and it was dissolved. Bismarck, however, still lives, but whether in spite of, or in virtue of the brandy, is still a disputed question.

THE DRUGGIST AND HIS POISON.

A bright druggist in Brattleboro, Vt., has contrived a scheme whereby the medicine buyer will be somewhat protected. He has connected every bottle containing poison with the prescription desk by electricity, so that whenever one is touched

a bell gives warning and wakes the compounder up to see, by a second look, whether he has the bottle he wants or not.

HER COFFIN, AT LAST, IS READY.

In Wallingford, Conn., there is a woman seventy-five years of age who has raised a family of fifteen children and had six husbands, the lady having been a bride three times since her sixtieth birthday. She now lives alone on the South Plains, having provided herself with a coffin and complete burial outfit, which is kept in the house ready for use.

VERY MUCH MARRIED.

Elderly beau (trying to scrape an acquaintance)—“Charming day, madame. Traveling alone?” Lady (vivaciously)—“Oh, no, I'm going down to Newport to be tried for bigamy. Those two gentlemen in the front seat are my brothers, those in the rear deputy sheriffs, and my two husbands are in the smoking-car.”

IT WAS THE “BUSTLE.”

A young woman of Louisville, “prominent in society,” stepping from a street car, slipped and fell violently. She was in great pain and was taken to a doctor's office, where it was found that one of the steel wires of her bustle had broken and pierced her thigh to the depth of several inches, making a serious wound.

FEVER HOSPITALS IN PARIS.

The sanitary committee of the municipal council of Paris has recommended that two fever hospitals be erected in two extremes of the city for the accommodation of patients suffering from whooping-cough, measles, scarlet-fever, or diphtheria. Each hospital is to have separate pavilions for each of these diseases.

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STATE HYGIENE.*

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Sanitary Science is an element of high civilization. There can be no advanced civilization without sanitary science, any more than we can have high civilization without the printing-press, steam, electricity, or education. Take away any of these elements and society slides backward toward barbarism; take them all away and you leave mankind barbarians. A nation that refuses or neglects to incorporate unto itself applied sanitary science must stand still Sphinx-like, while a desert gathers about and the drifting sands bury it from sight.

That the Commonwealth of Pennsylvania has engrafted into its corporation this child of progress is a mark, not only of patriotism, but is also the evidence of advancing civilization. It is an earnest that no moss is to grow over our institutions, that no drifting sands from that fatal desert, fogyism, shall bury our civilization.

But the mere enactment of sanitary laws and the establishment of a Board of Health will not secure to the people the blessings of good sanitation. There is work, much

work, to be done before we can realize the highest good of the new health institution. Of this work I wish to speak to you in a suggestive way to-night, asking you to consider that I undertake this duty at the request of the members of the State Board of Health, whose mouth-piece, for the time being, I am.

The first thing to be considered is, that, outside of a few persons, a knowledge and appreciation of what sanitary science is, and what a State Board of Health can do, is almost entirely lacking among the people. Scientists, sanitarians, physicians and a few others, know, because it is either in their line or because they are inclined to general culture. The legislators who passed the bill creating a Health Board were most likely largely ignorant of the subject; they enacted the law on trust, and on trust the people received it, because those who did know said it was a good thing to do. Now, while we may praise the spirit by which a State Board of Health was established, we may well tremble for its destiny when we remember that legislators and the people will not go on year in and year out maintaining a Health Board on mere blind trust. To perpetuate itself it must afford some tangible and practical good. If I were asked what is the most alarming menace to the perpetuity of our State Board of Health, I would answer, ignorance,—ignorance among the people of its principles, its functions and its power for doing great good.

* The annual address of the State Board of Health, delivered before the Legislature of Penna. at Harrisburg, Pa., April 14, 1887.

This Board of Health is on trial. It is new to the people, and untried in its effects. The good it can do cannot be realized in a year or two years; its good will increase each year as it becomes more efficient, and gains the co-operation of the populace. In the meantime the people must be educated to wait, not wait to be educated; they will not wait without the education.

No free people ever accepted an institution that did not commend itself to their understanding. A mysterious law would be a dead letter, and an uncomprehended institution would be a farce. The people must be educated in a practical knowledge of what sanitary science is, and what it will do when applied by a Health Board. They must be convinced that it will benefit them before much good will or can come. The new institution must be founded on popular favor, or it will end in failure. An unpopular law and an unpopular institution are alike inoperative among free-men. The Sunday laws are dead letters to-day, and the people never took kindly to the Fugitive Slave Law. Sanitarians cannot of themselves keep the Board of Health alive; the united efforts of sanitarians and legislators will not make the institution effective unless you have the people with you heart and hand.

Civil law in a government such as ours must have popular sanction or die of dry rot. Laws dusty with worn-out issues of ages forever gone, and laws formulated for the anticipated civilization of a hundred years to come, will alike be inoperative. Civil law in this Commonwealth must have just that vigor that will keep it abreast of the times, neither lagging behind nor forging too far ahead of the age. The State Board of Health law is a little ahead of the times, but just far enough in advance to incite the people to catch up with it. This they must do, and until they do the Board of Health institution will live a critical existence of trial.

There are two factors in human-progress which are too often lost sight of—the people are tenacious of established methods and opinions, and distrustful of innovation. A new idea taking the place of an old one is more painful than that of the permanent teeth taking the place of the milk teeth. It is true that individuals are often radically progressive—the people are always conservative. Every grand work that has blessed mankind won its place by breaking down old prejudice, and conquering conservatism. It took years and martyr heroes to educate the masses up to an appreciation of the enormity of human slavery. It took an internecine war to establish the lesson even after it was learned. Our system of free schools, which now so commends itself to popular favor, had a bitter and long contested fight before it became established as a State institution. As the people hesitatingly accepted the free school system, and as they now pride themselves in that institution, so will they, when better informed, accept with pride the system of State sanitation.

If there is any legislator here who is in doubt concerning his duty relating to the State Board of Health, I respectfully ask him where he would prefer to have stood when the question of human liberty shook this land, where would he have stood when the free school question agitated the people of this commonwealth, among the conservatives or among the radicals, among foggyites or among the progressionists, among the do nothings or among the heroes? The opponents of those measures, and those who stood aloof, are spoken of with bated breath, while the actors and heroes of those times and measures ring on the tongue of praise. The time will come when the rise of the Board of Health law will stand with the grand achievements of the age.

It is time the people should know that

man was not made to be racked with pain, or broken by disease. When one sickens it is because of physical sin; a broken law is at the bottom of every bodily ill, and the man who dies before old age, is as clearly sacrificed as is the felon strangled on the public scaffold. The world rings with indignation when it learns of the hanging of an innocent man; how it should howl at the appalling array of premature deaths! Mankind is often its own executioner. Tolerating disease is a crime, and every premature death a murder.

Fellow-citizens of Pennsylvania, the sanitarian sees you and your loved ones surrounded with dangers the most imminent and deadly; he sees the poison in the cup, the precipice before you, the flood of death around you, and he raises his voice in warning, he stretches forth his arm in rescue.

One of the most effectual means by which the people may be led to take an interest in sanitation will be the work of the Board of Health itself. That Board will attract to it, and organize for work, the scientists, the real teachers of this age.

We want new fields of thought run through with the shining plow of science. We want to set the statician at work collecting and collating facts relating to diseases, their causation and prevention. We want to set the chemist at work with his analysis, and the physicist with his microscope and spectroscope. Such an organization is possible only by state aid, and its advantages are simply incalculable. No grudging appropriation should stand in the way of the most thorough and efficient organization. In no other way can we hope to discover the whole truth about the ultimate causation of disease, and in no other way can those causes be exterminated.

The people of this State have hitherto received but small benefit from sanitary science, but it is now possible if the hands

of the Board are not tied by meagre appropriations. This Board will attract to it and organize into one co-operative body the men and the measures connected with public health, men and measures which will move with a singleness, earnestness and directness of purpose that will bring forth the most astonishing results.

Disease has too long had malignant sway; let us try the benignant rule of Hygiea. The suffering from preventable diseases and the consequent loss of life must be laid at the people's door, and the only mitigation is in their ignorance. Thousands of graves, too short for humanity, but not too deep for remorse, dot, as with marks of despair, the hillsides of our beloved State. How much keener the remorse, and how much deeper the despair when we are brought face to face with the awful truth that the diseases of children are nearly all preventable. From every churchyard dead children rise up in judgment against us. The only power to lay these sad ghosts is an efficient Board of Health.

I know how prone radicalism is to run over into hyperbole. Of all the places in the world and of all the subjects, this is the place and this the subject where I should guard against extravagant expressions. I desire rather to understate than tell the full and awful truth. No one can afford to exaggerate on a subject so pregnant with good to our race, nor is there need to exaggerate; the truth plainly and briefly told is all-sufficient.

Am I stating the case too strongly? Can the importance of organized sanitation by the State be stated too strongly?

Yes; to a people steeped in ignorance and superstition. Oriental heathen encamped by millions about Brahma's mystic temples would listen to no appeal outside of priestly oracles. In their camps along the Ganges they breed cholera, a plague that spreads wider than their creed and

kills more than their Juggernauts, they would heed no statement of mine. The dark-skinned hordes of the upper Nile, as they gather about their fetich to charm away a demon, would not be warned of that more deadly demon, the malaria of the jungle. The case may be put too strongly for some even in this land, who with fanatical frenzy still persist in believing that dead children, weeping mothers, and stricken households are but the awful visitations of God. But I am not addressing oriental heathen, nor fanatics blinded by sullen conceit; I am addressing American civilization; I am appealing to an enlightened people, to the people of a free State, a State with thousands of schools and academies, a State that holds Independence Hall. And to this people and in this hall, the fittest of all places to speak to them; this hall the common forum of the common weal, I solemnly and earnestly declare, that with them and on you as their representatives rests the responsibility of stamping out the preventable diseases that are the special scourges of the inhabitants of Pennsylvania.

If there is a special class of citizens whose opinion merits your regard on the subject of State sanitation, it is that of the physician. Efficient sanitation will hurt the business of medicine. At a moderate estimate a State Board of Health will reduce disease to the extent of ten, and more, probably fifty per cent., and of course will reduce the physician's income in like proportion. Disease is the doctor's harvest; Boards of Health shorten the crop. Self-interest would prompt the medical man to oppose health boards, but since he advocates them, his opinion is entitled to that much more weight.

We are fond of saying with Pope: "The proper study of mankind is man," and yet, with the accumulated wisdom of two thousand years, how little the average man or woman knows of himself or herself!

We know all about other people, next to nothing of ourselves. We know the size of the sun, the temperature of the moon, and the weight of Saturn. We spend millions to teach our children the geography and the histories of foreign lands; we study the habits of extinct races that gnawed bones in caves, or slept on piles out on lakes; nay, we even teach the very anatomy of the cave men and pile dwellers of antiquity! But how many dollars are spent to teach our children self-knowledge, the kind of knowledge most important of all? Millions of dollars are annually ungrudgingly spent in this State to maintain a system of public instruction which imparts all other kind of knowledge but self-knowledge. No one grumbles at the expense. But if a few thousand dollars are appropriated toward disseminating the knowledge of how to maintain health and prolong life, a general groan of disapprobation comes from over the State like the wail of miser's robbed of their gold!

I am not here to find fault with our public school system, or to protest against the enormous outlay of money to maintain it; but I do think it is mistaken policy to pay out millions to train the mind and refuse thousands to develop bone and brawn. I do complain, that because of the lack of sanitary supervision some ugly evils are beginning to show themselves in our public schools. I do insist that our public schools are lacking in the health department, and they will not be as good as they should be until a State Board of Health brings them all under the influence of applied sanitary science.

Some of the evils that are becoming painfully apparent in our public schools, are threatening to American manhood and womanhood, and if we are to prevent our race from degenerating, we must begin at once and place our schools on a better sanitary basis. In an address to the State Medical Society of Pennsylvania I have

already pointed out the evils that threaten our race, and threaten our free schools. For the evils of over-study by the "cramming" system, the evil of training the brain to the neglect of the body and the moral faculties, will not only lead to race degeneracy, but will lead to the ruin of our public school system. To prevent these growing evils every lover of his race, every friend of the free school system must come to the rescue, and come soon, or it will be forever too late. We must set the sanitarian at work with the school teacher. We must find out how much our children can strain their eyes without injury to vision; we must see how much they can exercise their brains without stunting their bodies, and we must see that they get plenty of outdoor exercise, plenty of wholesome air and sunlight, and plenty of rest and sleep. These things are all neglected at present, or held as of secondary importance; and yet they must be made of first importance, or farewell to American pluck and vigor. The time is come when this commonwealth must reorganize our public schools on a good and thorough sanitary basis.

A State Board of Health will awaken inquiry, provoke discussion, incite criticism, and inject its influence into every hamlet of the State. It will open the eyes of the people to a fact which is overlooked, that hygiene not only imparts a healthful life, but also a pure and joyous life. It is astonishing how sanitary science permeates and vivifies every relation and condition of life! We need a State Board of Health to write over every school house door *Mens sana in copora sano*. We need a health institution strong enough to compel educators to train our youth physically and morally, that we may have men and women who are healthy as well as learned, virtuous as well as accomplished. We want the crop of disease shortened and life prolonged. We want sanitary knowledge

spread among the people, and that these things may be done we must have a Board of Health clothed with competent authority and quickened by a liberal appropriation of money.

I never could endure to offset a human life with gold, for what is a life compared with wealth? But I know, and you know, of scores of families that would pay the expenses of our Board of Health, if by doing so they could call back to life a loved form forever faded from sight; a beloved voice whose echo is heard only in a bereaved mother's heart. Whose breast does not throb with regret at the memory of the loss of two children from the households of Governor Pattison and of Governor Beaver? Where is there a man who would vote nay to appropriations that would restore those lost children to their parents? Alas, money or Health Boards will not

Back to its mansion call the fleeting breath; but money and health boards will prevent much of such shameful calamities in the future. The executive officer of the present Board of Health, Dr. Lee, traced the cause of those two deaths to faulty sanitation in the executive mansion. Let us stop this terror, let us have fewer bleeding hearts. If money will stop sorrow, then pay it out.

The lack of information about hygiene and sanitation, even among learned people, is astonishing and mortifying. Popular notions on the subject are often wide of the truth. Take, for instance, the popular notion about filth. Let us look at this filth for a moment. On every street and alley may be found the regulation pile of dirt. Now, excepting the question of beauty and cleanliness, affecting only æsthetic people, and excepting that dirt pile is used as convenient filth to fill the columns of newspapers, or to spread on the minutes of Councils, or to incorporate into the resolutions of indignation meetings,

that pile of dirt is harmless. As dirt, or garbage, or filth, it is not detrimental to health, popular opinion to the contrary notwithstanding. The statement that the ammonia generated by the decomposing filth and finding its way into drinking-water is noxious, is not true. The presence of ammonia in such cases, however, is pretty conclusive evidence that while the filth was generating ammonia it was also breeding disease-germs, and that the presence of the former should make us suspect the presence of the latter also.

Again, the popular notion that the stench arising from decaying filth is the cause of disease is fallacious. The essential factor of disease is the germ-fungi, which have no smell, or at least the bad odor does not come from them. But here, again, the stench should make us suspect that germs are also growing in the filth. The foul odor of decaying garbage is more like the beacon that warns of dangerous rocks, than like the rocks themselves. The same sun that breeds singing birds and sweet flowers, also breeds the rattlesnake and the poison plant; the same filth that breeds foul odors, also breeds malignant, disease-producing germs.

Dirt as dirt will not produce disease, but if dirt be sown with a few germs, or disease-producing fungi, they will grow and rapidly multiply therein, until the one time harmless dirt-pile will become the hot-bed of malignant pestilential germs, that scatter far and wide like poison from the Upas, carried by the wind, by flies, by animals—carried hither and thither, sowing other filth with fungi to develop new centres of contagion, tainting food and drink, clinging to the clothes of passers-by, and carried into happy homes to infect them with the mildew of disease and the blight of death. That dirt-pile should be cleaned up, not because it is filthy, but because it is a breeding-ground for the propagation of disease-germs.

But suppose there were no such fungi, or germs, extant; then all the filth in all the world would not grow them, and dirt-piles would cease to be of interest except as hateful objects. Suppose there were no Canada thistles in existence; then the soil would not grow them. To prevent the growth of thistles we destroy the seeds, not the soil. You may allow filth to accumulate on every street and alley, but not a single case of Asiatic cholera would occur, because there are no cholera germs in America to plant that filth. But woe to the city that allows filth to fester within its limits when the cholera germs do get a foothold in the land! The filth in and about this city would breed typhoid fever, diphtheria, measles, scarlet fever, and other kindred diseases, because they are indigigenous—the germs that produce them are ever present with us. So far as relates to yellow-fever the people of New Orleans need not concern themselves about filth in cold weather, because frost kills the fungus which produces that disease, and if that city is revisited with that plague the coming summer it will be because fresh germs are brought from their foreign source, when every spot of filth will become their breeding-ground.

As the germ theory of disease bears an important relation to sanitation, and in order that you may know how a State Board of Health may prevent germs, let us look a little further into the subject.

Long before the microscope revealed disease-germs, experience, observation and analogy—the mathematics of medical science—taught that the cause of many diseases was best accounted for on the supposition of germs of infection.

When we contemplate the wonderful profusion of visible vegetation, from the oak to the daisy, we are led to believe there is no room for more; and yet the invisible forms of vegetation really outnumber those seen by the naked eye.

These microscopic plants or fungi are found in countless myriads everywhere—from the equator to the poles. The botanist has classified them and named several species. Of them is an order called *Schizomycetes*, comprised of species called *bacteria*, *bacilli*, *micrococci* and others, and this is the order and these the species that cause many kinds of diseases. Now, it is the work of boards of health to prevent the propagation of these microscopic plants. I have no time, nor is it necessary to speak fully of these fungi; the facts I wish to impress on your minds are that they grow from seeds or spores, that they possess distinctive individuality, that each species has its identity just as have oats or barley, or Canada thistles, that these fungi will grow only when planted, that bacilli spores will produce bacilli, bacteria bacteria just as oats will grow oats, but not wheat, that these fungi grow best in filth and foul air, that their virulence largely depends on the foulness of the place of their growth, that their extreme smallness of size fits them for floating in the air, collecting in wounds, for entering the body by the lungs, the stomach, the skin, and that their presence in the blood manifests itself by the onset of the special disease peculiar to each species. That is to say, the germ that produces yellow fever will produce that disease and no other; the fungus that produces typhoid fever will bring on that disease and no other, and so on. That is the whole story of disease germs briefly told.

How do we know this story to be true? Why, not only by seeing them with the microscope, but by actually planting the seed of each kind and raising crops of the same, precisely as the farmer plants corn and harvests corn. When bacteria spores are planted, bacteria is the crop. This wonderful achievement sounds like the dynamics of the spirit world; it is work done in the unseen world, and yet it is a

hard materialistic fact. Science is finding more things in heaven and earth than dreamt of by philosophy. As a fact it is not difficult of knowing and the people should know it, they should know that the sanitarian can weed out disease fungi with almost the same readiness that the farmer weeds out noxious plants. The Board of Health stands in precisely the same relation to the growth of human beings and domestic animals as the farmer to his crops—both are trying to grow crops and prevent the tares.

Pasteur, of Paris, not only raised crops of various species of fungi, but he learned that by cultivation the fungi became modified, losing much of their malignancy, and that these modified germs produced a modified disease, with immunity in the individual. We have similar experience in the effect of cultivation in some plants, which have become so modified that from bitter or unwholesome fruit we get savory and wholesome food. This is what has been done with some fungi. Pasteur has raised modified germs from the fungi that produce charbon, chicken-pox, and splenic disease in cattle, and his services to supply these modified germs to the farmers have been in large demand. Not only man but live stock are benefitted by these discoveries. This Pasteur is the man who is now attracting so much notice in relation to rabies and hydrophobia. He claims that by culture he has succeeded in raising germs so modified as to be almost antidotal to mad-dog poison. This latter claim is *sub judice*, but who does not wish him success? and, in the face of past achievements in this direction, who shall predict failure?

This germ theory throws new light on Jenner's vaccination for small-pox. In the latter case the small-pox germ by culture in the udder of the cow becomes modified, and gives a modified disease with future immunity, just as Pasteur's culture germs do.

Don't you see how intelligently and successfully the sanitarian is working out the problem of disease? and cannot you see how hopeful the times are for the eradication of much misery? And, I trust, you will also begin to feel how all important is a State Board of Health, and that it should be made thoroughly efficient by the fullest authority and the most liberal appropriation of money.

Two short years ago Koch left his bacillus fungus found by him in the sputa of consumptives drying on his microscope in Berlin, while he hied away to Eastern climes to do—what? To give to airy nothing a local habitation and a name, for at that time the cause of cholera was airy nothing. He gave to the world his comma bacillus, and the world being told what causes cholera will take such steps as will prevent it from leaving its Eastern habitat.

Did ever tales of magic thrill with more startling statements! The Alladin lamp of science is illuminating human footsteps too long taken in the dark. Such men as Koch and Pasteur are brought to the surface by governmental patronage, and by such patronage their works are made blessings to mankind. Is Pennsylvania ready and willing to do her share in this grand humanitarian scheme? We have plenty of latent home talent needing but the encouragement of the State to bring them to the surface. Will the Keystone of the Federal Arch give the keynote to her sister States by calling these men to the post of wardens of the public health?

The diseases most prevalent in this State are typhoid fever, spinal and scarlet fevers, diphtheria, measles and whooping-cough. They are caused by specific germs, and are all preventable. But to prevent them we must prevent the growth of the germs which cause them, or at least find a way to modify their malignancy.

If all governments were to combine to

exterminate wheat, then it would be stamped out of existence. If wheat were the cause, say of typhoid fever, then wheat, and with it typhoid fever, would be blotted out forever. If oats were the cause of diphtheria, this Legislature would see to it that oats would be stamped out. Now wheat and oats are not more real and specific than are disease fungi. Wheat and oats are visible to the naked eye, and possessed of definite forms and qualities. Wheat and disease germs may grow in the same dirt pile if planted therein, but neither will grow unless planted. If the specific germ which produces typhoid fever were once exterminated (and it would have been exterminated long ago if it were as patent to the senses as wheat), then typhoid fever would disappear from the face of the earth, and all the filth of all the world would not raise it out of its eternal grave. The same is true of all germs, and true of the diseases produced by them.

I believe there is extant a law intended to exterminate the Canada thistle. That plant is the scourge of the field, its seeds are scattered far and wide, precisely as spores of disease fungi are scattered. This law, if executed, would stamp out the thistle. Such a law was necessary because individual effort was unavailing. The lazy farmer would grow enough seeds to sow a whole township. No one ever disputed the wisdom or the right of the State to pass laws for stamping out Canada thistles.

There are plants more noxious than thistles; plants that bring disease and death to thousands of people and animals in this State every year. These plants grow beside our homes, nay in the very chambers wherein our loved ones sleep in supposed security. Have you lost a child by any of the diseases I have named? If so, they came to their death by plants that grew around your home. Shall these plants be

allowed to grow? Shall we continue to fold our arms and look on disease as a necessary evil, and on death as the work of Providence? The wail of bereavement is heard over the land; it is the wail of superstition, and nothing will hush that wail but the still small voice of reason. Let us get rid of the barbaric habit of calling all mystery Providence. The mystery which has been the dogma of one age has been the materialism of the age following. Mystery when solved is mystery no longer, and the mystery of diseases and their causes has been removed from the cold ether of superstition to the solid ground of reason.

Ignorant people take a solemn delight in meeting their Deity in painful and melancholy circumstances. They find him in disaster and at funerals, never at the wedding feast, and when they do meet him it is in terror and sorrow. If there were no sickness, death and woe, there would be no Deity for such people to meet. How much sweeter it is to find our Deity in the healthful and joyous home! Blessed be the thought, we can get rid of much sickness and death, and yet have enough Providence to solace the heart!

It was long ago agreed that the State has the right to pass laws and appropriate money for the extermination of beasts and birds of prey. If it has the right to protect dumb animals from the depredation of wild beasts, why may it not protect them from the ravages of pneumonia and hoof and mouth disease? And if the State has the right to protect domestic animals from disease, why may it not protect human beings against pestilence and premature decay? A State Board of Health if made thoroughly efficient will do more for the farmer and stock-raiser than for any other class, for it will not only protect him and his family, but his poultry, his sheep, cattle and horses from disease.

The vastness of the subject drives me over more ground than I can cultivate. Suggestiveness rather than argumentiveness must characterize my effort. The question of hygiene and the questions growing out of it run so deeply into our lives and are so intimately connected with human rights, that comprehensive argument in the time allowed me is impossible. I do wish to arouse your interest in this great and universal subject. I do wish to aid in bringing you to see and feel the importance of a State Board of Health, and your solemn, almost awful, responsibility in making that Board a Board not in name only, but thorough effectiveness.

It is not pleasant to assume to advise public officials concerning their duty, nor will I risk such assumption on this occasion. But as a citizen entitled to the privilege of petitioning his law-makers, I say to you that no bill on your calendar, important as that bill may be, equals in importance a bill for enlarging the powers of the State Board of Health. Either that Board is necessary, or it is not; if unnecessary it should be abolished; but if necessary it should be made as efficient as power and money can make it. It should have full power and authority to do its work thoroughly. The character of the work will tolerate no half way measures. Diseases, their causes, prevention and treatment, demand the most skilful and constant work.* Cutting down a few Canada thistles, or strangling a few wolves will not abate the scourges. The Board must be empowered to go to work all over the State, fully equipped and organized. And there is another thing to remember, the Board is on trial, and it will stand or fall by that trial. State sanitation will stand or fall for years to come by that trial. If it is crippled by lack of funds it is impossible for it to make that impression of which it is capable, and the people, at least for years to come, will conclude that

the old way of disease and premature death is just as good and cheaper. Do not, I beseech you, do not submit it to the humiliation of failure by paralyzing its hands with weak appropriations. I voice the sanitarians in saying to you with all the fervor of thorough conviction, that once let the Board of Health be given full and complete opportunity to manifest its usefulness and it will be perpetuated as one of the most popular institutions of our State.

I am aware of the sincere desire of legislators to make records for economy in voting for the appropriation of public funds, and I am also painfully aware of how often this conscientious regard for duty is detrimental to the public service. Legislators are so often unjustly criticized that they become overcautious regarding their votes on the appropriation bills. How foolish! My impression, which grows stronger every day, is that the people, while they want honest government, don't want a cheap government, nor do they want half-starved institutions. I call your attention to the fact that it is rare to condemn legislators for the expenditure of monies for the public benefit. If you look about you you will find that the men who are the most frequently returned to this legislative body are the men who vote for liberal salaries and liberal appropriations, while the sticklers for poverty-pay and paltry sums are generally left at home. Parsimony in voting for liberal appropriations for public benefactions never made a man a single vote, and liberality in supporting such measures never lost a man a vote. Who would not rather stand with those who in our late Congress voted millions for defense, than among those who doled out the economic cent? Economy may sometimes be demagogery instead of patriotism. Go count the short graves in this State, go stand by the tombs of the victims of fever at Plymouth and Shenandoah, and then talk

of economy. Weigh out the tears, the agony, the stricken households, and then weigh out the gold that would prevent such terror, and wail over it like a miser.

Suppose that from some authentic source it was learned that an invading army was marching on our frontier, bent on overrunning our State with slaughter and pillage. All other business would give way, and by unanimous consent both branches of this legislature would enact such measures as would effect the prompt repulsion of the invaders. From an authentic source you know that in the coming twelve months thousands of young people will die in this State, thousands of others will suffer with pain and grief, and thousands of dollars will be lost. And, knowing this, can you, will you, hesitate in taking such steps as will, in some degree, stop the deaths, palliate the suffering, and prevent the loss of money? The means are at your disposal, and fortunately the very means required and that means you have in a thoroughly equipped State Board of Health.

Asiatic cholera, a name almost as terrible as death, has been hunted to its Eastern cradle; from thence it starts out on its rounds of death, with caravans along the desert, on rivers in boats, over mountains and plain, in railway trains, across seas in ships, until its germs are planted in every land where commerce sets its foot. When its germs die out, as they do in America, it is known with the confidence that predicts effect from cause, that from its Oriental breeding-ground it will again start on its rounds of havoc and despair. But it is also known that, as an effect the sequence of a known cause may be averted. Cholera may, by strict quarantine, be kept out of a country. If India were to send hither her hordes to invade our land we would guard our coasts with cannon and soldiers; shall we be less vigilant, less patriotic, when she threatens with her

plague, a scourge far more dreadful than her armies?

This age calls for heroes; not heroes panoplied with sword and shield, and quickened by a fair lady's hand; not the crusader guarding the portals of an apochryphal tomb, but heroes armed with science, and waging war on error.

Men of culture are the knights of the new crusade. They seek no spoils, no selfish chivalry lures them on, no thirst for glory actuates them. Their struggle is for the universal brotherhood of man, their desire to leave the world better than they found it.

State hygiene is the inevitable outcome of a degree of civilization, that degree now marked on the dial of progress. Legislators may be perverse and the people indifferent, but a tried and true Board of Health is as assured as that our nation is going forward, because the methods and sequences of evolution are as inexorable as fate, and all obstacles go down before its awful force. It is the doom of man in spite of himself to be ever growing wiser, and better, and grander, and more God-like. Let us anticipate, let us hasten our glorious doom, not wait to become automaton of involuntary destiny.

On the world's fierce field of battle,
In the bivouac of life,
Be not like dumb driven cattle,
Be a hero in the strife.

FORCED VENTILATION *vs.* NATURAL VENTILATION (OR VENTILATION BY HEAT).*

BY RUSSELL THAYER, C.E., OF PHILADELPHIA.

Air to be perfectly healthful must be pure.

Air is contaminated by many causes, most of which originate from man himself and his surroundings.

*Read before State Sanitary Convention at Philadelphia. From advance sheets of Annual Report.

As man inhales the air that envelopes him, to keep the man supplied with pure air, you must move the man or move the air.

To move either requires an expenditure of force and it therefore depends upon the relative economy in expenditure, as to which costs less to move.

But the man may from necessity be unable to be moved; then the problem is narrowed down to the consideration of the best means for moving the air.

Air unconfined needs no artificial impulse, but air that we breathe is far more often confined. Hence again our question is narrowed to the consideration of how to move confined air. Confined air can be moved by heat acting expansively and directly upon the air as when we use a fire-place or heated flue. We can apply the heat to water, and carry the steam to the vent flue where by the condensation the heat is applied to the air column to be lifted.

In either case we are said to ventilate by heat.

If however, we go a step farther and apply the steam to move a fan which in turn moves the air we are ventilating by mechanical means.

In any case we employ power, and consume fuel to obtain the power, and it is finally narrowed to a discussion of fuel consumption and power application in the consideration of the question, which tends to produce the most satisfactory results in ventilation, a fire or a fan.

The friends of heat ventilation and the enemies of all ventilation arraign fan systems on three charges, viz.:

- 1st. As costing more.
- 2d. As being more complicated.
- 3d. As requiring more skilled attention.

The chief claim made by advocates of fans "that they do or can be made do better work" is tacitly allowed. And this

shows the inconsistency of the general public, for in arguing a question before an association of this character it certainly is hardly to be expected that the question of *cost* should be given so much prominence. But in defence the writer appeals to your own experience. Is it not very often the case that the first question in regard to any sanitary appliance is, "How much does it cost?" This is no exception and in attempting to place before you the relative merits of fire and fan ventilation it is impossible in any spirit of fairness to pass by unnoticed the objection so often urged against fan ventilation, the great cost.

Cost or money outlay can in this instance be considered as first the outlay for the plant, and second, subsequent outlay for maintenance.

A comparison of figures will probably show that the outlay for fan plant is generally, if not always, in excess of that required for fire ventilation. And this may be ascribed to two causes. First, if steam heating is employed, the unwillingness of the contractor to allow proportionately for parts rendered unnecessary by use of fan, and further the retention of fireplaces as matters of ornament even when unnecessary. And, second, because the first cost of fan and motor and necessary equipment is considerable. A third reason for this might be found in the fact that heat ventilation is good, bad or indifferent, according as it is cared for or slighted, and that each diminution is attended with a decrease in cost, so a heat ventilating system which as first laid out is quite elaborate is by successive restrictions, omissions or changes reduced almost to a nonentity, yet always retaining its name and full title; while with mechanical ventilation there is a limit to omissions and restrictions, for even if all else be removed you must have a fan and motor to make your system "mechanical."

Comparisons therefore, are often unfairly made between inefficient specimens of heat systems costing little, and well laid out fan systems, always in point of cost to the disadvantage of the latter. Critics are often unjust in their strictures. For example, a system of fan ventilation was recently put in a public building in Chicago at a cost of nearly \$30,000, an enormous amount the critics claim.

Bearing in mind that owing to the absence of any adequate provision of flues, two-thirds of the outlay was for galvanized iron pipe to supply these deficiencies, the remainder is no very great sum considering the duty required, viz.: 36,000,000 cubic feet per hour.

In another case a ventilating company offered to ventilate a large office building for \$6,000, when the plans were first drawn. The same company, after the completion of the building, has been called upon to do the work, but at a cost to the owners of \$15,000, and that with several floors omitted.

The question of first cost is easily and economically settled provided experts have access to the plans at the beginning, for no system can be cheap that must be placed in an occupied building.

This charge of excessive cost of plant originated at a time when ventilating fans and machinery were crude and the loss of power enormous. People who to-day repeat this forget that ventilating machinery has been keeping pace with all other devices in the march toward perfection. A horse-power to-day will move 15,000 cubic feet of air per minute and with machines utilizing 80 per cent. of the power applied.

The cost of maintenance has been most carefully examined. By tests, for the accuracy of which the writer can vouch, the following results were obtained. The flue system was both horizontal and vertical. The air or escape shaft was 40 feet

high and 38 inches diameter. The temperature of external air averaged 18° Fahr. By the use of a fixed quantity of coal, a fan removed and discharged 875,000 cubic feet of air per minute, a grate fire 425,000 cubic feet, a steam indirect stack 360,000 cubic feet. All modern tests with improved machinery prove that pound for pound fuel will do twice the work in moving the air, when used to generate power for use with a fan than when applied directly. The second and third charges, as requiring more skilled attention because more complicated, can be considered together.

The tendency in modern buildings is to complicate the system of heat ventilation, if used, and to simplify the system of fan ventilation. As buildings have grown into such enormous proportions, the systems of heat ventilation are found to be inadequate to satisfy the demands of an educated public, when applied in their simpler forms. So they have grown by constant additions and modifications, while the latter or fan system, at first regarded with doubt by even its staunchest friends, and therefore hedged about with every safeguard, has been found after experience to require none of these complications, and to-day is better in fact with the fewest possible parts.

As to requirements of skilled service, there can hardly be a question, for with mechanical devices almost, if not quite automatic, and with the greatest simplicity in arrangement and construction, there cannot possibly exist the demand for skilled attention which is so often insisted upon.

But there are other advantages peculiar to mechanical ventilation which can be best shown by comparison.

All systems of so-called natural or heat ventilation depended for their efficiency upon a difference in weights: for as a confined volume of air is heated, hence

rarified, the column becomes lighter than a corresponding column of outside air. Thus the force of gravity is called into action, and the heavier outside air rushes in to displace the lighter warm air. With tall chimneys and intense heat, this difference seldom amounts to the fall of more than a few feet. The suction power therefore is seldom strong and must be carefully nursed in all the modifications of branching flues. Extreme care must be taken in fixing dimensions, proportioning areas, avoiding or providing for bends and turns, lest the distant points where the suction is to be felt are slighted. How easily, with such demands for splendid engineering, is it for inexperienced or incompetent people to make fatal mistakes.

Then again heat ventilation is not elastic. Designed with reference to certain conditions within and without, a change or modification of any one of the elements disarranges the system. The flue may be too small or too large, too short or not of the proper shape, proportions or location, or not properly connected. The temperature outside will constantly vary and the duty done by the shaft will vary accordingly. Then again the wind may be strong from the east, west, north or south, and the exposure of each room will effect the volume of discharge. The heat may be insufficient to lift the air column, and the rooms may ventilate into each other. The hot air flues may blow cold as well as hot air, and down draughts be found where up draughts were intended. The air may be heavy and moist and sticky, and the ventilation correspondingly sluggish. With all of these possibilities is it any wonder that in spite of lavish expenditure it is so difficult to find a perfectly ventilated building, ventilated by heat?

If it were possible to correct the rise in outside temperature by extending the flue

by some means, by expanding and contracting it as the demand for ventilation increased or diminished, then and not until then would it be possible to arrange a perfect system of heat ventilation.

But how is it with a correctly placed fan? Depending simply upon the power supply, the speed can be changed and by it the volume taken from or given to any room however distant can be varied. A variation of temperature or an increase of moisture cannot affect it, and at the same time the ventilation of the building is entirely independent of the movements in the extraneous atmosphere. There is nothing in the condition of the elements to be feared. With the same care as to details the fan system is immeasurably superior because more positive and reliable. If details are neglected the heat system fails altogether, while the fan will still do work. What would the ordinary heat system do in a pipe that made nine (9) distinct separate bends in a length of sixteen (16) feet? And yet three rooms to-day are ventilated by such a pipe from a fan with a variation of less than one foot a second from their more favored neighbors.

It is difficult or useless to ask of any system of ventilation perfect work, without providing suitable access. The architect driven well nigh to desperation by the demands of the style or use of the building, or worse still the whims of the owner, and not correctly informed as to the facts, rejects mechanical and turns to heat ventilation as the only system possible "in this case." Any draughtsman can lay out series of flues in a building plan for heat ventilation, but few can make them work. No architect who has consulted an expert worthy of the name, but has found that the system of mechanical ventilation could be varied to suit requirements, and if mistakes were made in size, if unlooked for changes were

demanded at the last moment, the fan could still turn a little faster, work a little harder, and do a little more than at first asked or expected. The net result may not be what it should be, but there will still be *results*.

It cannot be denied that there are some few places where heat ventilation may be more economical and the only available means to be used. The line however of demarcation can be easily drawn, for when by reason of size or peculiar arrangement, *any complication* enters into the problem, then the economy of heat ventilation disappears.

There has been within the past few years a rapid and radical change in public opinion as to the necessity for ventilation and the best means of obtaining it. This has not been accomplished without great effort nor without much wild theorizing. And while to-day there is much to discover experimentally, it can be safely claimed that the entire theoretical field has been well investigated. In this, as in many other departments, where theory and experiment go hand in hand, experiment has lagged, while theory has run wild. We have rested content with the experimental research of others. We have in some cases taken another's works and built our theories upon them, as facts, only to find at last that the so-called facts were veriest fancies.

Atmospheric conditions, methods of life, and plans of construction differ essentially in some important particulars in this country from what we find abroad in many places, and it is more wise to carefully weigh and consider these important elements in dealing with the intricacies of the problem of ventilation, as applied in our own country, than to rely too largely upon experiments and data found in foreign treatises having reference to the subject under consideration.

That we need pure air, is an axiom in

the minds of most people. But how much do we need? How seldom is the question asked by the owner of a building? Is it not more often the case that the inquiry is made, how little can we live upon, and annoyed by the estimate of cost, he looks longingly back to the golden period of the past, when as they say, there was no ventilation and no exports and no sanitation.

In the ventilation of our buildings let us avail ourselves of the power which is perfected for our service. In this question, as in others of a like scientific nature, the mind of man has been able after careful thought and investigation to control matter. Prime motors can now be obtained suitable for this purpose of great variety, efficiency and economy of operation. Fans are made which grasp the air with which they come in contact and drive it with perfect reliability to the points where it is required. The mechanics of the problem are simplified and understood, and by using *forced means* of ventilation either on the "vacuum system," or "plenum-vacuum" combined, we are assured of an absolute certainty of results, which in my judgment and experience cannot be obtained by any other means.

INEBRIETY TRACED TO THE INTOXICATION OF PARENTS AT THE TIME OF CONCEPTION.*

BY T. D. CROTHERS, M. D.,
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The physical health of the parents at the time of conception controls the future of the child to a large degree. An old writer said "that distempered and unhealthy children could often be traced to

family broils at the time of conception." Dr. Downs, in his late Lettsonian Lectures, states that the physical health of the parents at the time of conception can be traced in the child; and, also, that when the parents are disturbed in health, and their relations broken up, unhealthy children will be the result.

Exact facts in this field are difficult to obtain, but often the circumstantial evidence points out facts beyond all doubt. Dr. Russ relates that the miners of Westphalia, who live away from their wives, are generally intoxicated when they come home on visits. The result is that a large proportion of the children born of these families are idiots and feeble-minded.

Galton has pointed out some very curious facts concerning the children of professional men, which indirectly relates to my topic. He found from a study of the heredity of the members of the largest scientific societies of London, that the legal profession presented the most eminent men and the fewest idiots. The medical profession came next, and lastly clergymen, who produced the smallest number of eminent men, and the largest number of idiots and feeble-minded. The lawyers gave origin to six times as many more eminent men as the clergy. The clergy gave origin to six times as many more idiots and feeble-minded as the lawyers.

This curious fact evidently applies to Europe, where the clergy do not represent the brain vigor of the educated classes. It also indicates that occupation at the time of conception, as well as physical vigor, has a power over the future of the child. In the study of the heredity of inebriates, many cases appear where the parents were greatly disturbed in health and their social relations on or about the time of the conception of the child, which grew up and became an inebriate, without any special exciting causes.

* Abstracted from the *Medical and Surgical Reporter*.

In the following cases inebriety was traced directly back to the parents at the time of conception. While it is not a new fact in science, it is not often so clearly traceable; usually, intoxicated states in the parents appear in idiotic, feeble-minded or defective children.

In the *first case*, the father was a sea captain; a healthy, robust man, who never drank except on shore, and then in great moderation. His ship went to China and the South Seas, and was away twelve or fourteen months at a time. He married in middle life; and, on returning from a long voyage, would go to his country house and be intoxicated with his wife for a week or more on wines—then recover, and start away again. His wife would drink with him, and be partially intoxicated. Several children were born, all of whom died in infancy except one, a boy, who grew up and became a periodic drinker, and came under my care. He was a nervous, melancholy young man, who could not follow any steady work long, and every two or three months he would rush away to a low house and secure some female inmate, and drink in the room to continuous stupor for days, then become exhausted, have gastritis, call in a physician, and quickly recover—then go back to the shipping-house where he was employed, and exhibit great energy and industry for a long time. His mind was unstable, and he was credulous of all things outside of his business. If he became angry and excited, he would stagger and talk like a man drunken, his face would grow red, the pupils of the eyes dilate, and the lids swell, and he would be more or less stupid for a long time. The approach of the drink paroxysm was marked by great business activity and anxiety to help some one. Then suddenly he would find a woman, and go away and drink as before. His early life was uneventful. He was a

good student, of quiet, retiring manners, and held up as a model for his companions. At puberty he suffered from a low, nervous fever, of several weeks' duration. He lived in his uncle's family, and had the best society and most temperate surroundings, when suddenly one day he disappeared. A week later he was found in a brothel, where he had been intoxicated from the time he came in. He gave no reason why he did this, and seemed indifferent to all counsel and advice. For a year after, he was temperate and exemplary in every respect. Then he disappeared as before, and drank wine in a room to stupor for a week or more, then came back. Then from this time these drink paroxysms were noted by the great secretiveness to go where he could not be found, and also by his never drinking until he found such a place, and a woman to join him. He was twenty-five years old when he came under my care. Two months after admission he ran away, and was brought back before he drank. He went to bed, and was more or less stupid on small doses of bromide of ammonia for ten days, then recovered. He seemed very sensitive to ten-grain doses of bromide. The next paroxysm was anticipated, and he was in bed a week with a low nervous fever and stupor. These paroxysms grew further apart, and finally merged in severe headache, which gave way to simple remedies. He became heir to a large property, and finally married and went West. In this case a most striking similarity was apparent between the drink paroxysms of his parents, which were marked by continuous use of wine to stupor for days in a room alone. In his case, beginning at puberty, it seemed to burst out as an inherited impulse, using the same spirits, and lasting about the same time. It was not apparent that he was licentious at any other time, or even when drinking; the

presence of a woman seemed all he cared for. His unstable, weak, nervous organization, and these peculiar drink paroxysms, pointed to the state of his parents at the time of conception. How the periodical drink manias of the parents should so impress the child as to be reproduced, antagonized by the circumstances and surroundings of life, is a mystery. Why he should suddenly, and without premonition, go away and drink to great excess in a peculiarly unusual way for a boy, and ever after keep it up at intervals under the same circumstances, can only be answered from a study of the heredity.

In a *second case*, the father was temperate, the mother had drunk beer at meals all her life. After marriage, and for several days, both were intoxicated, and continuously under the influence of spirits, celebrating this event. Conception took place at this period. A little fretful child appeared, which cried night and day for the first year. By accident, whisky was found to produce the most perfect relief. From this time nothing but some form of spirits would allay the nervous irritation, and as he grew older he would cry for it, and refuse to be satisfied with any other fluid. At ten he drank beer regularly every night, and at puberty he drank to great excess. I was consulted. In appearance he was feeble and imperfectly developed. His mind was uncertain and changeable; he said the taste and effects of spirits gave him the greatest pleasure. When he could not get spirits he was delirious, and after using two or three glasses he became stupid, and laughed at everything until he fell asleep. He was placed in the care of a physician, who tried to withdraw the use of spirits by reducing it from day to day. After the spirits were withdrawn, he developed mania and delusions of persecution, during which he

escaped from control and drank to stupor. The mania disappeared; again the effort to break up the use of spirits was tried, the mania returned more violent than ever, and the spirits were resumed and continued up to death, at twenty years of age. Three other children were born to this couple, who were temperate and of average strength and vigor. The parents never used any spirits after the first year of marriage.

In the *third case*, a man was placed under my care who had occupied a very responsible position of trust, and who with an insane indifference had drunk to great excess, and forfeited all honor and respect. He was educated, and a man of talent and great energy. He was temperate up to forty years of age, when suddenly he drank to intoxication, and was seen on the streets shouting in a delirious way. In two or three days he became intemperate, and seemed to have no regrets or sorrow for the past. He manifested no interest in the advice and counsel of his friends, and made no remarks of explanation, nor gave any reason for his conduct. Several months later he drank as before, and returned to his work with the same cool indifference as to his conduct and its consequence. He was forced to resign his position as officer of a bank, and gradually went down lower and lower, until brought to me. He drank periodically; the free interval being from three to eighteen months, the drink paroxysm lasting from three to six days. During this paroxysm he was maniacal, and reeled up and down the street, or was seen in an open carriage, always going where he was most prominent, and making public speeches. He seemed possessed with delusions of power and grandeur, and placed himself in the most prominent places, interpreting the attention he received as evidence of his greatness. When he recovered he seemed

to have a paralysis of all conception of the nature and character of his conduct. On all other matters he was clear and intelligent, but on this he was silent and reserved. He recovered, and went to the far west to live on a cattle ranch. In his history it appeared that his father, who was a temperate, healthy planter, married for the first time at forty. Soon after he drank to great excess, and was after this a periodical drinker until his death ten years later. His son, mentioned above, was conceived in one of these early drink paroxysms. The father was delirious at these times, and spent his time on the street and in prominent places, preaching and lecturing in a maudlin way. When he recovered he was strangely oblivious to any past conduct; said he did not remember or believe he was intoxicated. The later years of his life, he was very angry if talked to about drinking, and would not listen to any counsel or believe he drank to his injury. This drink storm always came on suddenly, and passed away after a short time, leaving the mind in a blank state of confused recollection of what he had done. In the case of the son, he seemed to have no realization that he had done anything strange or unusual, and listened with doubt and indifference to all that was said. The remarkable similarity of the symptoms of father and son, coming on at the same time of life, and following periodically, noted by delusions of power and grandeur, and desire to appear prominent, and the loss of consciousness of the past, or its relation to the present, in his own case, seem to indicate a direct heredity from father to son. These cases are sufficient to call renewed attention to this subject, and throw light on many of those unexpected outbreaks of inebriety that are a source of wonderment. Inebriety will always be a confused field of speculation, until it is made a special study by physicians.

INFECTION AND DISINFECTION.

It has often been pointed out in our columns, as elsewhere, (says *The Lancet*) that deodorization is one thing and disinfection is another. The destruction of bad smells by no means involves the destruction of "infective agencies," but the destruction of bad smells is also an important work, and one which every disinfectant intended for general use ought to accomplish. Carbolic acid is defective in this respect, for although a good disinfectant, it does not deodorise, and simply adds its own disagreeable smell to those which existed before. Chlorine, metallic chlorides—such as the chlorides of zinc, mercury, and lead—sulphurous acid, and the alkaline permanganates are far more effectual in this respect, and each possesses in a greater or less degree the power of disinfection. Whilst the "saucer" treatment of the sick-rooms with a little Condry's fluid or chlorde of lime may well be distrusted, the laudation of such means as the use of euchlorine (a mixture of chlorine and chlorine peroxide) and bromine as aerial disinfectants cannot be commended. Sulphurous acid is sometimes underrated. As gas it is just as unsuitable in the presence of patients as bromine or euchlorine, but in dilute solution it is very active. Complete disinfection of an infected atmosphere in the presence of patients is impossible, but partial disinfection is easy, and the complete disinfection of wearing apparel, bedding, &c., by the prolonged use of weak solutions of metallic chlorides, sulphurous acid, and the like, can be readily effected without the slightest injury to the fabrics.

A NEW POST OFFICE.

Malaria is the name of a newly established post office in Mecklenburg county, Virginia.

The Annals of Hygiene.

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Editorial.

DR. WOOD'S ADDRESS.

It was with the greatest gratification that we saw every seat in the Hall of the House of Representatives at Harrisburg occupied, and many persons standing, when Dr. Wood ascended the platform to deliver the Annual Address of the State Board of Health, on the evening of April 14th. It was a significant gathering and was truly suggestive. For many years ineffectual efforts had been made to secure a Board of Health for this Commonwealth, but each legislature, for one reason or another failed to confer this great boon upon the people. Finally, under the influence of the terrible epidemic of typhoid fever at Plymouth and growing popular sentiment combined, the last legislature created the "State Board of Health and Vital Statistics." It was, and still is, a new departure; and as Dr. Wood truly says, the majority of those who voted for the bill did so on trust. Now, within two years of its creation, we find one of the most prominent physicians of Pennsylvania, an

ex-president of our State Medical Society and himself an ex-Senator of the State, journeying two hundred and fifty miles from his home in Pittsburgh, to occupy the Speaker's platform in the House of Representatives and to eloquently appeal to a hall full of legislators for increased facilities for this most vital of Boards.

The speaker very truly says that the State Board of Health is now on trial. If it is not regarded as a necessary or useful organization it will be abolished. To those who stop to reflect, it must be regarded as by all odds the most vital and imperatively necessary and useful of all State organizations; one, before which, it would be no exaggeration to say, all others sink into comparative insignificance. Charity, of course, demands that we support our orphans; but charity also, and economy as well, suggests that we take measures to prevent the creation of orphans, by removing as far as possible the causes of the premature deaths of parents. We must support our hospitals, of course; but would it not be cheaper, wiser and generally better policy to remove the cause that makes hospitals a necessity? We must have prisons, because drunkenness and *inherited taint* have made criminals; but the hundreds of thousands of dollars annually spent to maintain these prisons might (we had best say *would*) be saved and the large number of not only useless, but worthless and dangerous persons annually living at the expense of the State, would be made, in time, useful and valuable citizens, did we but have such universal observance of sanitary laws as would do away with the transmission of unsound organizations—in other words, we would venture the assertion that a "sanitarian cannot be a criminal."

We must of necessity have educational institutions, because the people seek knowledge, and it is right that they should be liberally endowed; but, of what avail

will it be to a man if he gain the whole world of education and yet preserve not his health? Will any one question for a moment as to the comparative happiness of the educated invalid and the healthy ignoramus?

We must have Reformatories, because the offspring of those who live not according to the teachings of nature, are so illy balanced in their moral natures that all natural sense of wrong and right are so blunted, that they must of necessity be caged as are the lower animals.

We must have all these and other varied organizations pertaining to a well ordered government; but we must, or at least, we *should* have, over and above all other considerations, a well ordered department of health. It is not an empty and meaningless motto that we have on our seal; no one will contradict the assertion that the health of the people is the most supreme of all laws; all will unite in *saying* that good health is preferable even to riches, after which we all strive, but the majority will content themselves with the *saying*, but will not urge the accomplishment of the reality.

One of the duties imposed upon our Board is the dissemination of a knowledge of hygiene, and this we are endeavoring, with the limited means at our disposal, to do to the best of our ability. This is a most important preliminary duty; for, as Dr. Wood truly says, "the people must be educated to wait, not wait to be educated." They must be educated as to the wonderful possibilities of a well supported State Board of health, and when they are thus educated we have no fear for the required support. Hence, this sanitary education of the people is really the most important task that sanitarians have now and will have, for some years, before them. Let us not complain; we ought to be much more liberally endowed than we are, but let us be thankful for what we have; we

will have an abundance in good time. Let us ask that while we are on trial we be not judged without the qualifying consideration of the meagreness of our appropriation. Let us wait while sanitary education goes on, and the time will *very soon* come when the people will regard the State Board of Health as the most vitally essential organization of this commonwealth; we are young and weak, we will nurse our infant Board, until and while we see it gradually grow into a vigorous and active and even more useful maturity, but let us now return our sincere thanks to Dr. E. A. Wood for his eloquent and most appropriate address.

AN EXPLANATION.

We hasten to make an explanation of, and an apology for, what would seem like an act of great disrespect towards a most eminent Sanitarian. For some time past we have published and will from time to time in the future, publish various illustrations of sanitary defects that have been found to exist. Many of these illustrations we have reproduced from the admirable work of Mr. J. Pridgin Teale, of England, adapting them to conditions existing in this country. As we intended to use many of these admirable drawings it was our intention to make acknowledgment of their source in the beginning in full. This we find, through carelessness, we have failed to do, and we now hasten to offer our sincere apology for an unintentional slight to Mr. Teale, and to explicitly say that these cuts are from that book that should be in the hands of every one, "Dangers to Health," by Mr. J. Pridgin Teale. We lay no claim to these cuts as original with us; we have simply borrowed them from our distinguished English friend, and interpreted them in language that would be more familiar to our American readers than the original

English text. Again, we apologize for our carelessness, to Mr. Teale.

WOMEN IN HYGIENE.

We want the women with us. We mean that we want to enlist the sympathy and co-operation and active support of women in our work of sanitary reform. Say what you please there is no one like an intelligent and educated woman to do work that is intended to appeal to the sentiment, to the better side of nature. There is a *subtle subtlety*, so to speak about woman's ways, not found in her rougher companion, and it is this influence that we wish to enlist. There is no one who can approach a woman in her influence on the hygiene of the home and family, and it is in the domestic circle that sanitary education must be most actively carried on. When the individual, at home, becomes a sanitarian, then does public hygiene become an assured reality. We cordially and earnestly urge the women to co-operate with us.

DISINTERMENT AND TRANSPORTATION OF DEAD BODIES.

We wish to call special attention to the rules (published in this issue), of our State Board of Health in reference to the disinterment and transportation of dead bodies. They should be carefully read by every one.

A FAMOUS PROGENITOR.

In the announcement of the death of Dr. Henry Detweiler, which occurred at Easton, Pa., on the 21st of last month, it is stated that six children, twenty-seven grandchildren, twenty-one great-grandchildren and two great-great-grandchildren survive him.

Notes and Comments.

WATER SUPPLY AND TYPHOID.

The *Philadelphia Times*, referring to an article in our last issue, says:

"Some significant figures on the relation of the water supply of cities to the annual typhoid fever death rate are contributed to the ANNALS OF HYGIENE by Army Surgeon Charles Smart. In twenty years the typhoid death rate per 100,000 population in New Orleans fell from 65 in 1866 to 16 in 1885, the average for the first of these decades being 41.3, and for the second, 24.6. In the same period the typhoid death rate per 100,000 population in Philadelphia, which was 60 in 1866, fluctuated between 41 in 1879 and 98 in 1876, the Centennial year, the maximum for any ordinary year being 74 in 1881. The average for the former decade was 55.8, for the latter 66.1, and the rate for 1885 was 64.

The important things to be remembered in this connection are that New Orleans has no sewers, and that its subsoil water is unfit for use, so that rain water, stored in cypress cisterns, is used for domestic purposes, while Philadelphia, with a sewerage system which, defective as it is, is vastly superior to the surface drainage system of New Orleans, draws its water supply chiefly from a river that is the natural sewer of 350,000 people.

There is, of course, some difference of opinion among medical experts as to the effect of water supply pollution upon the Philadelphia typhoid rate, but until all the authorities are ranged upon the favorable side of such a question the conclusions indicated by Dr. Smart add to the importance of making early improvements for the sake of purification. Prosperity depends scarcely less on reputation than on undisputed facts."

COMMONWEALTH OF PENNSYLVANIA.

STATE BOARD OF HEALTH.

R-4.

REGULATION OF TRAVEL AND TRAFFIC.

REGULATIONS IN REGARD TO THE
DISINTERMENT AND TRANSPORTATION OF DEAD BODIES.

DISINTERMENT OF BODIES.

RULE I.—The removal of any body from its place of original interment is declared to be a nuisance dangerous to the public health, and is prohibited, unless the same be done under the direction and by permission of the Local Board of Health or Borough Council.

RULE II.—The above rule applies as well to the removal of a body from one grave or vault to another in the same cemetery as to its removal to another burial ground or place.

RULE III.—The removal of dead bodies from any burial ground situated within the built-up portions of any city or borough is forbidden between April 1 and October 15.

RULE IV.—The disinterment of the body of any person who died of any contagious or infectious disease is strictly prohibited, unless by special authority, and upon such conditions as the Local Board of Health or Borough Council may impose.

TRANSPORTATION OF BODIES.

RULE I.—The transportation of bodies of persons who died from small-pox, Asiatic cholera, typhus fever or yellow fever is strictly forbidden.

RULE II.—From October 15 to April 1, all other dead bodies may be transported without restriction, except those who died of diphtheria, scarlet fever, typhoid fever or measles, which must be enclosed, as prescribed in Rule III.

RULE III.—From April 1 to October 15, all dead bodies, when presented for transportation, must be enclosed in air-tight zinc, copper or lead-lined wooden boxes, or in air-tight iron caskets; or, if in any other form of coffin, said coffin must be in a hermetically sealed box, enclosed in a manner satisfactory to the Local Board of Health, Health Officer or Borough Council.

RULE IV.—No person or article which has been exposed to the contagion can accompany the body.

RULE V.—Every dead body must be accompanied by a physician's certificate of death, and a certificate from the shipping undertaker that the body has been prepared for transportation in accordance with the rules of the State Board of Health of the Commonwealth of Pennsylvania.

RULE VI.—In receiving any dead body which has been shipped from beyond or within the States of New York, New Jersey, Delaware, Maryland, West Virginia or Ohio, or the Province of Ontario, the rules of the State or Provincial Boards of Health of the same must be respected, and their Transit Permits will be honored without subjecting the body to delay, provided such rules do not conflict with any of the preceding rules in these Regulations.

RULE VII.—The following shall be the form of a Transit Permit for the transportation of a dead body within, into, or out of, the limits of the Commonwealth of Pennsylvania:

TRANSIT. "Stub to be retained by official issuing Permit." TRANSIT PERMIT. 1. Issued to..... 2. Name of Deceased..... (If a minor, give parents' names.) 3. Interment at..... 4. Date of Death.... Age, .. 5. Place of Death,..... 6. Cause of Death,..... 7. Certified by,..... M. D.	Attest—This Permit must in all cases accompany the body to its Destination.	Commonwealth of Pennsylvania. FORM 7. TRANSIT PERMIT. [For Public Carriers.] R. R. Agents and all other Carriers see Back of Permit. In the..... County, ... 188 Permission is hereby given to remove the remains of..... aged....., who died at..... (City, borough or township and county.) on the..... day of..... 188 ; the cause of death being..... and a Transit Permit being asked for burial at..... in the State of..... (Signed by)..... Name of Undertaker or person in charge of the Transit, ... (Official title.) (P. O. Address.)
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Coupon No. TWO, to Transit Permit of.....
 Before this body leaves..... the Carrier or Transporter must tear off this Coupon. If otherwise detached from the permit the Coupon must be received. (See back of Permit.)

Coupon No. ONE, to Transit Permit of.....
 Before this body leaves..... the Carrier or Transportation Agent will tear off and keep this Coupon. If otherwise detached from the permit the Coupon must not be received. (See back of Permit.)

(BACK OF ABOVE PERMIT.)

Railroad and Steamboat Agents, Ferry-Masters and all Carriers that convey the remains over the limits of the county where the death occurred will retain one of the Coupons here-to attached, and deliver the body only to the persons holding this permit. The name of the deceased must appear on the Coupons, which will be returnable to the city or place through or out of which the body is first conveyed, or to such authority as may be directed by the person who issued the Permit.

The 1st Coupon should be taken by the carrier who transports the body from the county where the death occurred; and the 2d should be taken by Carrier or Agent of Transportation upon the route beyond said county, and it may be so taken at either terminus of the distance over which the second stage of transportation extends, as the local sanitary regulations may require; but whoever detaches and takes said 2d Coupon must write across the back of the Permit, as well as upon the 2d Coupon itself:

2d Coupon taken at (Insert name of place or Station) by
(Insert name and title of person.)

Such an indorsement will answer instead of further coupons whenever the body is conveyed; and the Permit is to be surrendered at the place of burial. It, as well as every Coupon, should be preserved.

2nd Coupon taken at.....
 by.....
SECOND } taken at.....
COUPON. } by.....
FIRST COUPON.

TRANSIT PERMIT.
 Issued at..... Co., Pa.
 Issued by.....
 To whom issued.....
 Name of Deceased.....
 Date of Death.....
 Name of person or Carrier in charge.....
 Date of Transit.....

(NOTE.—The Rules and Regulations of the State Board of Health are laws to be obeyed by every individual in the State.)

By order of the Board.

Benjⁿ Lee,
Secretary and Executive Officer.

STATE CAPITOL, HARRISBURG, NOVEMBER 10, 1886.

COSMETICS.

THEY CANNOT BE EXPECTED TO WORK
AUGHT BUT MISCHIEF—THE DAN-
GERS OF CLOGGING THE PORES
OF THE SKIN.

We take the following from a lay exchange:—"If examined through a microscope the skin's surface is dotted all over with minute tubes. These are the openings of tiny orifices passing down into the centre of the skin, and are connected with the perspiratory glands. The average number of these outlets to every square inch of the body is not less than 2,500. Now the office of the perspiratory system is to remove to a great extent the blood's impurities. No person can enjoy sound health or have a really good complexion when the skin's action becomes impeded. Where this happens a variety of cutaneous and other disorders frequently arise, mainly owing to a blockage of these small orifices. It therefore becomes at once self-evident how important a matter it is to ensure a free action of the skin's pores. Bearing this fact in mind, let us proceed to examine what action cosmetics and unguents must necessarily have upon the complexion.

Although every possible attention may be paid to health, a salutary condition of the skin and complexion by no means always follows. Persons inherit various constitutional maladies and hereditary taints which tend materially to deteriorate the complexion. Generally speaking, cosmetics can only have a physiological action upon the face, viz., to stop up the tiny tubes before mentioned, thus greatly interfering with a healthy performance of the skin's action. This fact was well known to the notorious Madame Rachel, who professed to enamel ladies' faces and beautify them forever. She took good care that all her so-called enamelling should be done at her own house, the

simple reason being that her process was so facile that otherwise it would have been difficult to have effectually concealed it from her dupes. Her enamelling process consisted in having the skin thoroughly washed in very hot water before retiring to rest, and again on rising with a lotion consisting of one pint of carbolic acid to forty of water. The water, she stated, had the peculiar advantage of coming from the River Jordan, but analysis failed to discover any special merit therein. She then advised a course of Turkish baths to follow, so as to thoroughly cleanse the skin. Any marks occasioned by an abscess were then effectually disguised by painting them carefully over with a lotion composed of one drachm of lapis caliménaris, three drachms of glycerine, and two ounces of rose-water.

It may be as well here to mention that to enamel the body is simply impossible. Were the skin's surface sealed up for twenty-four hours, the consequence would be indeed most serious. We have reason to believe that the celebrated Madame Vestris was the first to create a belief that enamelling the skin was possible. This is not surprising, as by some artificial means she was enabled until an advanced period of life to play juvenile parts on the stage. She kept her secret well, and it was only owing to an accident that it was discovered that her wrinkled and shrivelled skin was made to appear young and beautiful by means of a well-fitting covering of fine gauze. A variety of cutaneous affections may most assuredly be traced to stopping up the skin's pores with powders, pastes, and other cosmetics.

It is true that some skin cosmetics do for the time being disguise a bad complexion, but at the cost, certainly, of making bad worse. The base of pastes, pomades, and face unguents are more or less alike, white wax, spermaceti, honey, and oil of almonds being common to them all. The

only possible advantage these preparations can possess is to soften the skin, which may be far better accomplished by rubbing into the face at night a lotion composed of equal parts of glycerine and rose-water, the face being previously well washed in hot water. This will do all that is required, and is greatly superior to besmearing the skin with thick pastes, which block up its pores. Occasionally some cosmetics, professing to whiten the skin, contain flake white, which, be it known, is none other than white lead. The practice is most dangerous, for it must be borne in mind that in addition to its transpiring functions, the skin also possesses absorbent powers. The absorption of lead into the system must surely be a self-evident evil of no small importance. Now, no matter what form of powder is applied to the face, it can but do mischief, and should therefore be studiously avoided by ladies desirous of a good complexion. Toilet rouges were long the fashion, but they have of late years to a great extent become superseded by carmine, a preparation of cochineal in every way superior.

Theatre rouges are made from Brazil wood, lake, and gall flower. Liebig discovered a substance called alloxan, an animal product, which on exposure to the air, through oxidation, gradually turns deep rose color, and imparts to the skin the most natural and delicate hue yet introduced into toilet articles. Lait-Virginal, a cosmetic highly esteemed, is prepared as follows: Simple tincture of benzoin two drachms, either orange or rose water 8 ounces. According to Beasley, the following is said to resemble kalydor and Goulard's lotions: Bitter almonds, 1 ounce; corrosive sublimate, 8 grains, and rose water, 18 ounces. The same authority states that Pate Divine de Venus, a much-vaunted cosmetic, is only composed of equal parts of lard, fresh butter, white

honey, and balsam of Mecca, perfumed with attar of roses. A very common remedy for pimples on the face and eruptions, advocated by believers in simples, is Goulard water. This lotion is none other than a soluble preparation of lead in a form most easily absorbed into the skin. Evil effects, at times of a serious character, are liable to follow its use, which should never be resorted to unless by medical advice.

LIVING TO OLD AGE.

SOME CURIOSITIES OF LONGEVITY NOTED IN DIFFERENT COUNTRIES.

The celebration of the Kaiser's ninetyeth birthday, says the *St. James' Gazette*, has led to the publication of the fact that there are now living in Prussia no fewer than 5,000 persons over ninety years of age, 600 of whom are centenarians. Of the latter class we naturally hear more than of their younger brethren in years. The smaller group are invested with a sense of completion wanting to those who have not reached the crowning distinction of the hundred. Since the attainment of his "second majority" by M. Chevreul, on the 31st of August last—on which day a list of centenarians appeared in the *St. James' Gazette*—many striking instances of longevity have been made public in this country. They comprise some thirty centenarians. But there are not wanting many notable examples of what may be called the "junior division," a proportion of whom may be expected to graduate in due course. Three persons have attained their ninety-ninth year, and three others have reached, without having completed, their one-hundredth. Among the latter stands Mrs. Whiteley, of Hull, who has been the mother of twenty-four children.

Posen, Silesia, and East Prussia are said to yield the largest number of aged

people of the Teutonic race. In proportion to its population, Wales, perhaps, most largely contributes to our own returns. But in England longevity—if it be at all really distributable—would seem to pertain to classes of individuals rather than to race or locality. The great age attained by Quakers has often been noticed; but their “bill of mortality” for 1886 is a remarkable one for them. Of the 229 “Friends” who died last year in Great Britain and Ireland 51 were between 60 and 70 years of age, 74 were between 70 and 80, 69 were between 80 and 90, and 10 were between 90 and 100 years. Among them were 17 recipients of income from the Friends’ Provident Institution whose average of age was 75 years. The longevity of annuitants is, indeed, proverbial.

Paupers are generally well represented among the death-lists of aged persons. From a report lately made to the Southwark District Board of Works, it appears that during the four weeks ended on the 16th ult, twelve persons died in the Christchurch Workhouse at the following ages: 68, 69, 71, 73, 76 (2), 79, 80, (2), 82, and 85 (2) years. Of thirteen inmates of the same establishment who died in December last, all were over 60, and three had severally attained the ages of 77, 82, and 84 years. Whatever their comparative value, these figures are in themselves remarkable. Among the “out-patients” of the unions are sure to be some very “tough” examples, who show on how little of this world’s goods a hale old age may be reached. Last autumn a laborer in his ninety-second year, living at Long Sutton, in Lincolnshire, broke his thigh for the sixth time. His previous fractures had been of one thigh five times; his last misadventure being with the leg which had hitherto escaped. This veteran had also dislocated his elbow twice and his collar-bone once. The

guardians considerably granted him the assistance of a nurse; and it is to be hoped that John Walker, of Long Sutton, received benefit at her hands.

Instances of extreme longevity in the United States are common; but few are more noteworthy than the statistics, lately published in Philadelphia, of the persons above 90 years old who died in that city during 1886. They include thirty-four deaths at 90 years of age; twenty-three at 91, twenty-two at 92, thirteen at 93, nine at 94, thirteen at 95, twelve at 96, eight at 97, three at 98, five at 99, five at 100, one at 101, one at 102, two at 104, and one at 109 years. A feature of this list is the great preponderance of women—a fact which seems universally to obtain in all similar returns.

By the limit assigned to these notes the name of Mrs. Elizabeth Innes—who died last month at Lybster, Caithness-shire, at the age of one hundred and seven years—should be excluded; but she is mentioned by reason of the rare longevity enjoyed by several members of her family. The mother of Mrs. Innes lived to the age of ninety-nine, and of four sisters one also died at ninety-nine, and the other three were all over ninety. A brother died at the age of eighty-nine. Many readers will be pleased to hear that Mary Howitt—in excellent health—celebrated her eighty-ninth birthday on the 12th inst.

Much has been written, not always profitably, about longevity. The following points are taken from an ideal sketch of a man “destined to long life,” by the German physician Hufeland: “He is of the middle size, and somewhat thickly set. His complexion is not too florid, his head not too big; his shoulders are round rather than flat; his neck is not too long. His hands are large! his feet rather thick than long; his legs firm and round. He has a broad and arched chest, and the faculty of retaining his breath for a long

time." As to his habits—"The joys of the table are to him of importance; they tune his mind to serenity." He eats slowly and has not too much thirst." "If he ever gives way to anger, he experiences no more than a useful glow of warmth. He is fond of employment, and of calm meditation and agreeable speculation. He is an optimist; a friend to nature and domestic felicity; has no desire for riches or honor, and banishes all thought of to-morrow."

HOME LIFE AS A FACTOR IN LONGEVITY.

Truly is the influence of the domestic circle most potent for good in all that makes life worth the living. This fact, really familiar to us all, is well portrayed by an eloquent writer in the *Philadelphia Times* of May 1st, who, lamenting the early death of so many of New York's brightest journalists, feelingly and pathetically says:

"I can count upon my fingers more than a score of men, brilliant writers and earnest workers, who died all too soon. Erratic as many of them were—wayward even some of them—they were almost without exception men of deep sympathies and tender friendships. Bohemians in fact as well as in name, their lives became a sacrifice, not to dissipation, as the world is apt to suppose, but to the homelessness that is inherent in Bohemianism. These young men, over whose graves I stood, one after the other, as the years rolled by, should be living still, in the prime of life and enjoying the health and happiness of a vigorous manhood. The world has lost of its best in losing them. They are dead, not because the world was careless of their talents, not because the tempter's wreathed and flowing bowl allured them. Death sought them out and came to them all too early, because

for them there were no hearthstones—because their lexicons of youth were robbed of the words home, love, sisterly sympathy, motherly tenderness and care. In an age when young men of position dine at the club and society dances at a tavern, genius must be nursed, if at all, in the saloon and literary friendships cemented in the poisoned froth of the beer-mug. When I think of these young men, who were my friends—friends filled with high aspirations, and clothed with the freshness and beauty of noble endowments—their untimely end comes back to me with a deeper sadness because their lost lives are a sacrifice to the social vice that makes the young men and the young women even of our cities nomads and gregarious. With us the Bohemian is a Bohemian simply because for such as he there is no home, and Bohemia in America borders on the realms whose king is death."

After citing a number of instances to sustain his assertion, he thus concludes: "I could name many others almost equally brilliant whose careers were closed in gloom and all too early. I will not extend the sad list. These examples will serve to illustrate the thought that is in my mind—the reason why so many men of this class die so early. They are dead because the warmth of the hearth has been turned up the chimney. In American cities, and especially in New York, the home has ceased to exist. The reason for this change is found in the ideas that prevail as to the education and duties of American women. Our girls are no longer the angels of the home, but animated fashion plates exhibiting themselves in the streets. They learn to strum the piano, but neglect the head and the heart—the sympathies and the affections. The boarding house, or, worse still, "furnished rooms without board," is uprooting American home life except among the rich and

among the plain common-sense people whose souls never soared into the realms of fashion. In a society so constituted, where there are no open doors leading into quiet, cosy family circles, what is a young man to do but to turn his back upon his cold cheerless room, to which he could not invite a friend if he has one, and seek society in the streets and the inviting drinking parlors in the gilded saloons that complete the work of ruin that boarding and lodging houses begin. In this age we see the remedy for social evils in the stars, but fail to look for them where was once the domestic circle but now is only the tiring room of people, who are cheating themselves into the belief that they are people of fashion."

PREVENTION AND RESTRICTION OF DIPHTHERIA.

The Board of Health of Lowell, Mass. has issued the following: "When a physician knows that a person whom he is called to visit is infected with small pox, diphtheria, scarlet fever, or any other disease dangerous to public health, he shall immediately give notice to the Board of Health; and if he refuses or neglects to give such notice, he shall forfeit for each offence not less than fifty nor more than two hundred dollars;

"When a householder knows that a person within his family is sick of small pox, diphtheria, or scarlet fever, he shall immediately give notice to the Board of Health, and upon the death, recovery or removal of such person, the rooms occupied and the articles used by him shall be disinfected by such householder, in a manner approved by the Board of Health. Any person neglecting or refusing to comply with either of the above provisions shall forfeit a sum not exceeding one hundred dollars."

DIRECTIONS OF THE PHYSICIAN.—It is

expected, that every physician taking charge of such patient, will advise not only in respect to medical treatment and nursing, but give needful sanitary precautions. The first step in treatment is *isolation*. No person should visit the patient but the nurse; if there are children in the family they should at once leave the house, or be kept as far as possible from the patient. They should not go to school or mix with other children.

ACCOMMODATIONS.—The room should be large, warm and sunny, with as little furniture as possible; it should be well ventilated and kept with scrupulous cleanliness. The secretions from the throat and nose, together with the discharges from the bowels, should at once be removed from the room and be disinfected. All linen, cotton or woolen, used about the patient should pass through boiling water before used again, and if it was a malignant case they should be burnt.

RECOVERY OR DEATH.—The room occupied should be thoroughly aired, cleansed and disinfected. The burning of sulphur, the solution of copperas and zinc, chloride of lime, and carbolic acid, are the most convenient disinfectants. If it was a bad case of diphtheria the more powerful disinfectants must be used in order to destroy the living germs, or bacteria, created by the disease. In recovering from diphtheria the person should be scrupulously careful for sometime not to expose others, particularly children. In case of death the funeral should be as private as possible, and the remains should not be exposed.

CAUSES OF DIPHTHERIA.—As this is a preventable and most dangerous disease, it is of the highest importance that the causes be understood and avoided. The seat is in the throat and is communicated by the breath. It is caused by infinitely small animalculæ, of a most poisonous character, called spores or bacteria,

created by *fermentation*. This proces of fermentation originates from decaying vegetable and animal matter, from the gas of sewers, cesspools, and vaults, as well as from sinks and filth of all kinds, whether in the air, in the water, or in the ground.

PREVENTION AND RESTRICTION OF SCARLET FEVER.

DT. NATHAN ALLEN, of Lowell, Mass., sends us the following which has been adopted by the Board of Health, of which he is Chairman: The instructions of the physician in attendance should be faithfully carried out, but to aid and emphasize them the following suggestions are made: The patient should be kept entirely separate from the family and waited upon only by a nurse or attendant. If there are other children they must be separated as far as possible from the sick, and not allowed to go to school, or mingle with other children, and no visitors should be permitted to see the patient. The room should be large and kept well ventilated, and, if convenient, situated upon the second floor. The success of the treatment depends much upon the surroundings.

THE CONTAGIUM.

The disease is communicated in a great variety of ways: By the breath, by personal contact, by exhalations from every kind of clothing used by the patient, as well as from furniture, carpets, books, toys, &c., used in the sick room. The germs of the disease may be transported great distances in clothing, and at the same time, lie dormant for months. It has been spread by marketmen in their clothing, by milkmen in their milk, and even by domestic animals.

RECOVERY OR DEATH.

In either case, the room occupied by the patient should be thoroughly cleansed, ventilated and disinfected. The more

common disinfectants are the burning of sulphur, the solution of copperas and zinc, the chloride of lime, but more powerful disinfectants are necessary to destroy the living germs of the disease, such as fire, boiling water, strong solution of chloride of lime, of mercury, of carbolic acid, &c. A patient recovering from scarlet fever should change or disinfect his clothing, and not mingle freely for weeks with other persons, especially with children. In case of death, the funeral should be private, and no exposure made of the remains.

GENERAL DIRECTIONS.

As children are especially liable to catch scarlet fever, the greatest pains possible should be taken in families, in neighborhoods, and in school to guard against the first case, and thus nip the disease in the bud. This is the secret of preventive medicine.

If unsanitary conditions never generate the disease, they aggravate it. Pure air and cleanliness are indispensable for successful treatment.

THE MURPHY TENEMENT BILL.

From the *Sanitary News* we learn that the New York Legislature has passed what is known as Murphy's Tenement bill. It provides for the detail of fifteen policemen to enforce the sanitary code of New York city, so far as it relates to tenement and lodging houses. The Board of Health is to make a report annually upon its work. The Mayor, one Commissioner of Health, the Commissioner of Public Works, one delegate from the Bureau of Inspection of Buildings, and the Street Cleaning Commissioner shall meet annually between Nov. 15 and Dec. 30 to consider the subject of tenement and lodging houses in New York and make such recommendations for the change of the laws as will best protect the interests of the people,

which are to be made to the Governor and Legislature before Jan. 15. The bill provides that certain conditions must be observed by owners of tenements. Some of these are that where more than one family reside on a floor the halls must open directly to the outside air with sufficient windows and without obstruction to ventilation. Each tenement-house shall be provided with such privy sinks as the Board of Health may require, one for every fifteen occupants in lodging houses, and one for every two families in dwelling-houses, which shall be plumbed properly and be adequately ventilated; all such receptacles shall be connected with the sewer by air-tight pipes as directed by the Board of Health. The law also contains a provision that every owner of a tenement or lodging-house must file with the Health Department his name and address; a description of the property by street numbers, the number of apartments, the rooms in each apartment, the number of families occupying each apartment, and the trades or occupations carried on in them. In case notices are served for the abatement of nuisances, they shall be posted five days in the house and mailed to the owner also. The law requires a semi-annual inspection by the Board of Health of all tenements and lodging-houses, and in case the owner fails to comply with the rules of the Board of Health, any court of record is authorized to issue injunctions restraining the owner. Water is to be plentifully supplied on each floor, and cellars shall be concreted and made water-tight. The bill is a long one and embodies the experience of New York sanitarians with this vexed question.

THE AIR IN SHIPS' HOLDS.

Dr. A. T. Dobrotvorski has recently published the results of a number of ob-

servations on the character of the air in the holds of Russian men-of-war from a hygienic point of view. In reviewing the works of previous writers on this subject, he claims for a Russian observer, "N. T.," who wrote an article in the *Morskoï Sbornik* (Nautical Magazine) for 1869, the credit of being the first to make definite analyses of the air in ships; observing that Parkes, in the second edition of his book published in England in 1866 and translated into Russian in 1869, states that the composition of the air in holds is not known. "N. T." found 1.19 per 1000 of carbonic acid on the upper deck of the monitor *Bronenosets* during the night when forty-one men were sleeping there. Dr. Dobrotvorski's estimations of CO₂ were made by means of a modification of Pettenkofer's method proposed by Nagorski, which however, he does not further describe, though he says it is the most exact and convenient plan, only requiring small bottles of the air. For the free and albuminoid ammonia he employed Dr. Fox's method, as given in his "Sanitary Examinations of Water, Air, and Food." This, as being probably but little known in Russia, he describes pretty fully. In the bilges of the *Peter the Great*, the largest vessel in the Russian navy, the moisture was found to be 89.5 per cent., the CO₂ 4.6 per 1000, the free ammonia 0.026 milligrammes per 1000 litres, and the albuminoid ammonia 0.246 milligrammes. The highest estimates of CO₂ were in frigates and floating batteries, the lowest in clipper ships. In the engine-room of the *Admiral Spiridoff*, an iron frigate built in 1868, the CO₂ was found to be as high as 8.22 parts per 1000. The ammonia found varied a great deal—being, however, only slightly higher in the frigates and batteries than in clipperbuilt vessels, and bearing little relation to the quantity of CO₂; thus, in the bilges of the *Peter*

the Great the albuminoid ammonia was 0.246 milligrammes per 1000 litres, in the engine-room of the *Admiral Spiridoff* 0.154 milligrammes, while in a part of the floating battery *Prevents* where the CO₂ was only 2.37 per 1000, the albuminoid ammonia was 0.564 milligrammes per 1000 litres.

LONGEVITY.

The Berlin *Statistischen Korrespondenz*, by way of celebrating the Emperor of Germany's ninetieth birthday, has recently published a list of all the known persons in the Prussian kingdom who are older than the sovereign. At the taking of the census of December 1st, 1885, there was one man of 120 years, another of 118 years; a woman of 117, another of 115; two women of 112; two men and one woman of 111; five women of 110; one man and four women of 109; three men and two women of 108; two men and ten women of 107; thirteen men and seven women of 106; and quite a large number who had attained to their 105th year. The total number of persons who gave their age at over 100 was 160. The Province of Silesia appears to be exceptionally favorable to longevity. Out of the 1073 male persons between their ninetieth and ninety-fifth year in all the Prussian provinces one in five is a Silesian, and out of the 306 men between 95 and 100 years old fifty-one are natives of Silesia. Out of the 2,766 Prussian women between the ages of ninety and ninety-five, 371 are Silesians. There are ninety-nine women in Silesia between ninety-five and 100 years old and thirty Silesian women who have exceeded their 100th year. The centenarians are thickest in the district of Oppeln. They are also numerous in the Provinces of Posen and East Prussia; but the western dominions

of the King of Prussia, and particularly the Rhineland and the manufacturing districts of Eberfeld, Crefeld, and the Dutch frontier, are not so favorable to extraordinary length of life. At Maidstone a maiden lady named Heathorn, known locally as the "Maid of Kent," has just entered upon her 105th year. She retains her good health and the use of all her faculties. She has a clear and accurate recollection of events which happened before Trafalgar was fought and won, and describes a visit she paid to the *victory* before and one paid after the battle.

CIGARETTES IN SPAIN.

THE ROW OF BABIES' CRADLES IN A SEVILLE TOBACCO FACTORY.

A writer in the *London Referee* says: When you enter the enormous rooms crowded with girls dressed in bright colors the coup d'œil is striking in the extreme. In one immense low-vaulted room there are 1500 girls. They sit in endless rows, about twenty girls to a row, on either side of the room, all at little tables, and rolling cigarettes. There is a blaze and a blur of color, a babel of tongues. Every girl has a gay handkerchief about her neck—every girl has a bright flower stuck in her hair. All along the walls hang the gay out-door dresses of the little cigarette-makers. As I walk, blushing and nervous, down an endless avenue of flashing eyes, I grow almost giddy. It is a sea of women's faces, an undulating ocean of flower decked heads. One has to pick one's way carefully down the central avenue, for it is blocked all along the line with cradles. The married cigarette makers are allowed to bring their babies with them to the factory. They rock the cradle with one foot while their busy fingers roll the cigarette.

"Silence!" is called by the forewoman

as the visitor passes down the lines, but there is a "chut-chut" every second from some dark-eyed wench who points to a cradle and holds out her hand. It is the habit of visitors to bestow occasional coppers on the babies, and so all the young mothers are on the alert for the visitors' charity.

The girls earn good wages. At many of the tables whole families are working together. But the hours are long and the atmosphere awful. The damp, warm odor of the tobacco in the long, low-roofed rooms is in itself almost stupefying. But there is no ventilation, and the atmosphere is absolutely indescribable. Many of the girls smoke cigarettes at their work. I was very glad to light one myself long before I had done the round of the factory."

DEATH IN CARRIAGES.

"It is a rather startling fact, although not generally well known, that the seeds of contagious diseases, such as diphtheria, small-pox, scarlet fever, typhoid fever, etc., are often planted in public carriages and hacks that are hired for parties, balls, pleasure drives, etc., and women and children frequently, but unknowingly take drives in close carriages that perhaps an hour or two preceding have carried to some cemetery the body of a child who may have died of some terrible, infectious disease."

This quotation from the head of an article a column long in one of our most popular daily newspapers, offers additional evidence, if any were needed, of the popular ignorance of hygiene. The fact contained in the quoted paragraph is the oldest kind of a *chestnut* to Sanitrians, yet the paper publishing it assumes it to "news" to the public. The occasion of this publication is the effort to have resurrected an ordinance, buried in the green of indifference, which ordains:

"That if any persons having diseases

shall enter any public conveyance without previously notifying the owner of the same they shall be liable to a stated fine, and hackmen and others are required to have posted in their vehicles notices that no person having an infectious disease shall enter the same. It was also urged to make it incumbent on hackmen and livery stable keepers when carriages are hired out to attend funerals to refuse to let a hack be used for the carrying of a coffin of a child unless it was guaranteed that the child had not died of any contagious disease."

Such an ordinance should unquestionably be enacted and we would urge in the strongest possible terms that it or something similar to it be made law.

THE ACTION OF TEA AND COFFEE.

Dr. J. W. Putnam is opposed to the indiscriminate use of tea and coffee, especially in the young. He says (*The Medical Press of Western New York*, January, 1887,) that they retard digestion; they retard destructive metamorphosis; they are cerebral stimulants; they are tonics; they are not food; coffee is a diuretic and antispasmodic. Bearing this in mind he thinks it is easy for each to draw his own conclusions. Their prohibition or use can be advised as special cases may demand. He is of opinion that "against the practice of giving tea and coffee to children we cannot speak too strongly. Childhood is the period when the nervous activity is at its greatest. The brain is ever busy in receiving new impressions. Reflex action, co-ordination of muscles, and the special senses are all under constant course of training. The nervous system is pushed to its utmost capacity, and long is the list of victims that follow its over-stimulation. In these little people nothing but harm can come from the use of such cerebral stimulants as tea and coffee. Bad then, as this

practice is, let us as physicians be aggressive in its prohibition. Do not be satisfied by answering No, when asked as to its use, but let us educate the families with whom we come in contact that such practice is evil."

STOVE-PIPE HATS AND BALD HEADS.

In *Popular Science* W. C. Guinlock says that he believes the common form of baldness is due entirely to the kind of hat that is worn, principally to the high hat and the hard felt hat, but also to any other head-covering that constricts the blood vessels which nourish the hair-bulbs. To have a clearer understanding of this we must remember that the scalp is supplied with blood by arteries at the back, sides, and front of, and lying close to, the skull, which diminish in size by frequent branching as they converge toward the top of the head. They are in a most favorable position to be compressed, lying on unyielding bone and covered by thin tissue. Consider what effect must be produced by a close-fitting, heavy and rigid hat; its pressure must lessen to a certain extent the flow of arterial blood, and obstruct to a greater extent the return of the venous; the result being a sluggish circulation in the capillaries around the hair follicles and bulbs, a consequent impairment of nutrition, and final atrophy. This pressure is not trivial or imaginary, as any one will admit who has noticed the red band of congestion on the forehead when a hard hat is removed after moderate exercise.

PERSIANS AND THEIR HEALTH.

The Persians have one never-failing subject of conversation; that subject is their health. The pleasure of talking about the weather is denied to them; for as eleven months out of the twelve are fine in Persia, the subject does not

present sufficient variety. But a Persian, to whatever class of society he may belong is never tired of talking about his ailments, real or supposed. In his eyes all Feringhis (Europeans) are doctors, and the European doctor is the very best of all. For many years at Shiraz there lived an old Swede who had walked into Persia in his youth. He knew nothing of medicine on his arrival; but finding that the natives constantly solicited his advice, he bought a few medical books and literally acquired a certain amount of knowledge by carrying out the good old principle of "Fiat experimentum in corpore vili." Happily the Hakim Sahib also believed in the "vis medicatrix naturæ." As a rule his drugs were harmless. "I have different colored liquids," said he, "and as long as there is bread and water to be had I am never at a loss for a pill." The pills were floured for the common people and gilded for the rich. At seventy years of age the Hakim Sahib died. He held the position of physician to the forces of the province, and was deservedly respected by natives and Europeans.

PHYSICAL WEAKNESS OF CITY YOUTH.

It has been truly said that "God made the country and man made the city," and if any proof was wanted that God knows best what is best for us all, it would be found in the results of the competitive examination of candidates for appointment as midshipmen in the Naval Academy at Annapolis by Colonel L. S. Bryce, from the Seventh Congressional District, which was held at the College of the City of New York, on April 29th. The tests applied by the physical examiners, Dr. Stuyvesant F. Morris, of New York, and Dr. Schaeffer, of the navy, were significant as showing the weakness and imperfection of city youths. Of the twelve

lads between fourteen and eighteen years of age who presented themselves for examination, not one was deemed physically worthy of a Government education. Dr. Morris said he never knew of so large a per cent. of rejections, the next largest being 35 per cent. Of these candidates three were rejected for defective eyesight, four for heart trouble and malformations of the chest, one did not meet the requirements as to stature, and the rest were rejected for various causes likely to render them incapable of withstanding the hardships to which Uncle Sam exposes his naval officers. The moral is obvious.

CHEAP LODGING HOUSES FOR MEN.

The New York correspondent of the *Providence Journal* thus writes of them: "In place of rooms to let they advertise beds. 'Two hundred clean spring beds' you read, and the prices vary from 25 cents a night to 10 cents a night, with wholesale terms by the week ranging from \$1.50 to 50 cents. When the elevated passenger sees one that presents the lodgings to the public view he does not wonder that the proprietors are backward about advertising rooms, for he sees the place partitioned off, usually with raw pine, into six-foot spaces, with 2½-foot hallways between them, the bigger divisions having wooden cots in them with only a foot or two feet of space at the side where the door is. There never is any carpet or matting, or pandering to aristocratic or luxurious notions—not even to the furnishing of a bureau or a bowl and pitcher. One of these cubby-holes in one lodging house is seen to be almost papered with pictures cut from illustrated papers and chromos given away by storekeepers. It is fair to presume that this is the abode of a regular lodger of domestic instincts, who regards his con-

nection with the room as a permanent relationship." New York may be a great metropolis, but her name is certainly not *Hygiene*.

M. PASTEUR'S METHODS.

On the 20th of last July, a man named Hamyau, of Dunkirk, was bitten by a dog. On the 20th of the following month the same dog, at that time probably rabid, bit another man, who was forthwith sent to Paris and subjected to the intensive treatment. His death from paralytic rabies formed the subject of M. Peter's first communication to the Academy. Hamyau, who six months ago was a strong, vigorous man, is now suffering from a strange illness, which those favorable to M. Pasteur's treatment affirm to be pulmonary congestion. M. Peters, on the other hand, does not hesitate to declare that the symptoms are due to *canino experimental* inoculation. Since the middle of February there has been paresis of the lower limbs and of the organs supplied by the pneumogastric nerve. The breathing is constantly oppressed, the pulse remains at 120, and the abdomen is tympanitic. Pressure made by M. Peter on the vagus gave rise to alarming dyspnoea and palpitation. The patient seldom passes a day without feeling neuralgic pains at the seat of the inoculations, but no abnormal sensation is felt in the scar of the bite. The symptoms have been somewhat relieved by the administration of pilocarpine in doses of fifteen grains daily, but M. Peters considers that the case will terminate fatally.

THE LATEST THING IN DUDES.

As it is to be presumed that the young *city* men, whom we elsewhere report as unfit, physically, to enter the naval academy, pelong to the retrogressive army of *dudes*, it might prove interesting to our

readers to learn that the *Oil City Derrick* notes a slight change in the new spring style of dude. His head is shaped still more like a five-cent loaf of bread and his legs are a trifle more bowed than last year. This feature in the change of style seems to us superfluous and unnecessary, but we presume it is all right. At any rate we do not propose to rail against the decrees of fashion. The newest dude carries his cane at an angle of forty-five degrees, suspended airily between his thumb and finger. The cane is occasionally changed from one hand to the other so as not to make the dude lop-sided. The dude's pants are larger this year than formerly, or else the dude himself is shrinking, we are not certain which it is. His collar seems to be an exaggerated shirt cuff fastened at the top with sleeve buttons. If the new spring dude can induce a dog to follow him so much the better, but we note a disinclination on the part of dogs this year to do the following act.

STORING UP SALT AIR.

A correspondent writes to the *Philadelphia Times* suggesting that we should "lay large cast iron pipes under ground from Philadelphia to the nearest point of salt water, and through these pipes force the fresh sea breezes to a large reservoir in the central part of the city, to which small pipes could be attached leading to private dwellings, and we could thus enjoy a 'breath of good salt air' without the trouble and expense of a trip to Cape May or Atlantic City. What a boon this would be to invalids, to infants in hot weather, and how comforting and exhilarating it would be to the aged and others who from want of strength or 'material aid' are unable to leave their dwellings. If you will permit me to intimate this matter in your paper, I feel confident

there are those now living who have the ability to mature the plans for the enterprise. There may be those who will treat my suggestions as the offspring of a bewildered imagination, but the project is feasible, and whoever lives a quarter of a century will see and enjoy the benefits of it. Mark my prediction." The project is doubtless feasible and would certainly be agreeable, but *would it pay?*

A CLEAN SWEEP.

The habit, so common in many of our cities of sweeping the days accumulation of dust and dirt from the store into the street, in the early morning, is not only a nuisance, but it is a *nuisance prejudicial to health*. The irritating effect of the dust thus raised on the eyes and the air passages is a more serious matter than might, at first blush, be thought. In many cities there is a law against this nuisance, but in the majority of such places the law is a dead letter. We are glad to note that in New York, recently, when the night police force came off duty all were ordered to get into plain clothes and arrest all persons found sweeping dirt from stores into the streets. The result was the arrest of nearly 300 persons, who were fined about two dollars and warned not to do so again; while in Philadelphia, about the same time, two men were fined \$5 and costs by Magistrate Lennon, for breach of ordinance in sweeping dirt into the street. The former of these failed to pay the fine, and was committed in default of \$300 bail. This is wholesome, very wholesome example, that should be imitated elsewhere.

LODGING EMPLOYEES.

The Executive Committee of the International Bakers' Union, No. 49, of Chicago, has prepared a manifesto to

employers, stating that the bakers have resolved that on and after May 1st, "ten hours shall constitute a day's work, except Saturdays, when twelve hours shall constitute a day's work, so that in various shops the Sunday for cake bakers may be done away with; that no employer shall board his employees, nor shall the employee live with said employer, but that the employer shall pay his employees \$4 per week for board." This manifesto meets our hearty approval. In the first place, ten hours out of the twenty-four is long enough for any one to work, while no one should work on Sunday, save *Editors* for whom there is no rest this side of the grave. We emphatically say that no employer should board (or lodge, more particularly) his employees, for such a custom would naturally deprive the employee of the wholesome exercise he would derive in going to and from his home and his place for work. We are heartily with this wise Executive Committee.

A REFORM ASSOCIATION IN ALLEGHENY CITY.

Citizens of Allegheny City have formed a Reform Association, the objects of which are: "To cultivate a proper sense of our duty as citizens; to promote the election of upright and competent men to office; to oppose the corrupt use of money, treating and other demoralizing practices on the part of candidates for office; to promote honor, integrity and truthfulness in politics, so that political affairs shall be governed by the same rules of propriety and morality which prevail in business and social life; to see that the public offices are administered for the public good; to see that municipal business is conducted on principles of integrity and economy; to repress vice; to *promote sanitary measures*; to aid in securing sound legislation; to promote

the general improvement of the laws; to bring to justice offenders against the election laws."

THE SENSE OF SMELL.

The extreme delicacy of the sense of smell in man has been shown by a series of interesting experiments by Messrs. Fischer and Penzoldt. In an empty room of some 230 cubic metres capacity, and tightly closed, a small quantity of the particular substance to be detected was thoroughly mixed with the air, and the observer then admitted. Among the different substances that were tested in this manner, it was found that the very smallest amount recognizable was .01 of a milligram of mercaptan. This quantity diffused through the room sufficed to make its distinctive character appreciable in the small volume of air coming in contact with the nerves of the nose, from which it was estimated that 1,460,000,000 part of a milligram of this substance was recognizable—an infinitesimal quantity, passing conception, but which science declares to be a fact.

PROPHYLAXIS OF YELLOW FEVER.

MM. Freire, Gibier, and Rebourgon recently presented a note at the Academy of Science of Paris on the Prophylaxis of Yellow Fever by the Inoculation of an Attenuated Virus. In 1885 and 1886, 6524 persons submitted themselves to this protective vaccination in Rio Janeiro, and during this period the total number of deaths from yellow fever was 1675. Of the victims 1667 had not been inoculated, the mortality amongst those protected amounting to eight deaths only. The authors state that, taking as the basis of their calculation the population exposed to the contagion, the percentage of deaths for the whole number was 1 per cent.,

whereas for those who had been subjected to preventive inoculations it was only 1 per 1000.

HOW THE JAPANESE GO TO BED.

There is a great deal of difference in the beds of different people. Our beds are quite low, as you know, while French beds are so high that a step-ladder is often provided for getting into them. German beds are furnished with a feather bed to put over you, even in the warmest weather. A traveler tells about a Japanese bed. It is eight or so thick silk wadded comforters piled upon the floor; upon this a very ample wadded coat is placed. You slip into this great coat, put your arms into the long sleeves fold it over you and sleep. The pillow is a block of wood placed under the neck; but it looks too hard, and I carry a rubber pillow to take its place. A paper lantern is lighted all night, for the people are much afraid of the dark.

THE HOTEL GIFFORD (AT ERIE.)

A young man, well dressed and apparently comfortable, stopped Health Officer Germer, of Erie, Pa., recently and poked a tough and unfragrant piece of cooked meat under the official nose of that functionary. The doctor thought it was a Waterford calf that had been run through a crematory to give it a more venerable appearance, but the young man explained that he belonged in Buffalo, had been locked up in the Erie county jail for a week, and that the meat was part of a farewell dinner that Sheriff Gifford had given him on the day of his departure. "Young man," said the doctor, solemnly, "when you come by Erie you should stop with the Reed House, the Arlington House, the Arcade House, or the Moore House. The Gifford House is only a fifth-class hotel."

TOO LAZY TO BREATHE.

The fellow who was born very tired grew more and more weary as he went through the haps and mishaps of childhood, the adolescence of youth, and the early period of manhood. At middle age he was the tiredest man then living. At fifty he was so utterly worn out with the simple process of existing that it occurred to him to calculate how many breaths he must draw if he went on living for twenty years more; and, being a man in fair preservation, there was a good prospect of his reaching the allotted three-score and ten years of average mankind. Well this tired citizen figured it out on the basis of 18 breaths a minute, 1,080 to the hour, 25,920 to the day, 9,462,280 for a year, and 189,342,800 for twenty years. The figures appalled him and he died in disgust and discouragement at the tremendous task of doing such an enormous amount of breathing.

AUTOMATIC MINDS.

Dr. Bernheim, the distinguished physiologist of Nancy, France, goes far in a paper recently published by him, to prove the well-known theory that the mind of a man in a certain pathological state becomes automatic, speaking and acting by the suggestion of others without self-control. He says that this state of mind can be produced by training, and was produced in the case of Moritz Scharf, of Tisza-Eslar, who told a long story of falsehoods before the Court, always in nearly the same words, accusing his father of the murder of that girl Esther. Dr. Bernheim maintains that the boy Moritz, by terror and corporeal sufferings, was tortured into that pathological condition and then repeated automatically what he had been taught to say.

CHILDREN'S TEETH.

It is gratifying to learn (says *The Lancet*), that the importance of proper attention to the teeth of school children—a subject on which we have more than once commented—is coming to be more fully recognized by managers of schools. Thus, at the North District School, Mr. Henry J. Moxon, L. D. S., has, at the solicitation of the managers, and with the approval of the Local Government Board, just delivered a popular lecture to the officers and senior scholars of the institution, on the construction, function, and means of preserving the teeth. This, we believe, is the first occasion on which an address of the kind has been given in a Government school, and it offers an example which may well be followed in other similar establishments.

POISONING BY SAUSAGES.

A child, 4 years of age, died recently in London (*Brit. Med. Jr.*) after eating some sausages; the other children of the family and the father also partook of the sausages, but deceased at more than the other children, and shortly after became ill and vomited a great deal. The following evening she grew worse, and a medical man was then sent for, but before his arrival, the child, who is stated to have been a healthy one, expired. None of the other children suffered. The sausages in question had been given to the mother by the landlady, who stated that she had purchased them a fortnight previously at different shops. A verdict in accordance with the medical evidence was returned.

CHOLERA IN AUSTRIA-HUNGARY.

We have all along feared (says the *Lancet*), that cholera might make its re-appearance this year in Austria-Hungary, and, as we have already announced, the

disease manifested itself a short time since at Esseg, in Southern Hungary. The latest news is still more disquieting, for we learn that three cases, certified to be genuine Asiatic cholera, occurred between the 25th and 29th of March at Buda-Pesth. It is not clear on which side of the river this occurrence took place; but in Pesth, on the eastern bank, where the disease was so prevalent last autumn, the conditions are specially favorable to a recurrence of the outbreak.

LUCINDA JOHNSON'S LETTER.

"How many times to-day have you inquired for a letter for Lucinda Johnson?" queried the lady at the delivery window of a colored girl, about ten years old. "Ten times missus." "And didn't I say there was no letter?" "Yes'm." "Well, why do you come so often? We don't have a mail from Chicago every half hour." "I know it, but ma reckoned dis yere letter come in two days ago, an' dat some odder 'Cinda Johnson had dun got it an' read it an' brought it back. You see, dar's twenty-four 'Cinda Johnson's in Detroit, an' when dar's a letter fur any of 'em it has to sorter go around. I'll be in again dis evening."

EXTRAORDINARY MORTALITY.

The extraordinary mortality in the family of the Baron Duradd excited the suspicions of the French Customs police after that gentleman had crossed the Belgian boundary four times in as many months, travelling each time with a hermetically sealed coffin, and bathed in tears over the demise of some near relative. The last time they opened the coffin against his tearful remonstrances, and found in it, instead of a corpse, a mass of fine cigars and expensive smoking tobacco, upon which no duty had been paid. The baron mourns now in the jail at Lille.

OUIDA'S HABITS OF WORK.

Ouida is said by a near acquaintance to work in this way: All her literary work is done in the early morning. She rises every day at 5 o'clock, and goes straight to her library, where she works three or four hours before partaking of any breakfast. Before she begins her literary work she works herself up into a sort of literary trance. Her enthusiasm in whatever she attempts in a literary way is very great, and her pen moves like lightning over the sheets before her. She writes very quickly in a large hand, and, when thoroughly "enthused," sometimes covers a sheet of foolscap paper with only two or three lines of five words each.

MORTALITY IN FRENCH PROVINCIAL HOSPITALS.

In a recent publication relative to the mortality in French provincial hospitals, Dr. Albert Regnard states that it is far greater than that of the hospitals of London or Paris. This is accounted for by the excessive number and faulty construction of the beds, by disregard to elementary hygienic principles on the part of the administration, and, above all, by the insufficiency of the food provided for the patients. Dr. Regnard therefore insists that, in all hospitals where the death-rate exceeds 13 per cent., improvement should be made in those particulars.

HEALTH OF NAPLES.

Medical statistics quoted by the *Pungola* represent the public health of Naples as being greatly improved. The number of deaths, which in February last year was 1551, has this year not exceeded 1407. The diminution of infectious cases is still more noteworthy, for whereas 76 deaths occurred from smallpox in February of last year, the number in the corresponding month of the present year was

only 8. No cases of cholera have been declared, and it is confidently hoped that Naples will be free from that scourge this year.

RUSKIN ON BICYCLES.

Mr. Ruskin doesn't like bicycles. "I not only object," he says, "but am quite prepared to spend all my best 'bad language' in reprobation of bi-tri-and-4-5-6 or 7-cycles, and every other contrivance and invention for superseding human feet on God's ground. To walk, to run, to leap and to dance are virtues of the human body, and neither to stride on stilts, wriggle on wheels, or dangle on ropes, and nothing in the training of the human mind with the body will ever supersede the appointed God's ways of slow walking and hard working."

PUTTING COINS IN THE MOUTH.

What a vile habit that is (truly says an exchange), which one sees indulged in on street cars by people who certainly ought to know better. That of putting coins in the mouth is the one referred to. It is quite common among women, who under such circumstances never seem to have quite hands enough, and so they press their mouths into service to do what is not only a vulgar thing, but absolutely filthy. The nickel which is taken from the purse may carry infectious disease.

HE WAS OPPOSED TO THE PUBLIC SCHOOLS.

"No, sir. I'm going to send my son to college. No public school system for him. Look at Jinks' boy! Jinks' boy has just graduated from the public schools and is a young man of thorough culture." "Yes, and half dead with consumption, and has had brain fever three times. Now look at Winks' eldest son!" "Is he a college man?" "Regular graduate,

strong as a horse, healthy as a mule, and makes \$5,000 a year in a base ball team."

AN EXTRAORDINARY ACCIDENT.

An extraordinary accident is reported from the neighborhood of Maidensstone, England. A lad, 8 years of age, was flying a kite, when he stepped backward into a forty feet quarry to the great horror of the bystanders. Fortunately for the little fellow, the string of the kite was tight around his wrist, and the kite, acting as a parachute, effectually broke the violence of the fall and he was only slightly bruised.

INOCULATION AGAINST PORCINE MEASLES.

A French provincial paper relates a mishap, which is not uninstrusive. A veterinary surgeon had been supplied with the preservative against porcine measles, and inoculated a herd of swine belonging to one of his clients. Unfortunately the pigs died, and the veterinary inoculator was obliged to reimburse their owner. The *Echo du Midi* says that he is about to bring an action for recovery against M. Pasteur.

19,000,000 LEFT.

A girl's paper, published by girls in one of the public schools in Victoria, British Columbia, under the head of "Foreign News," announces, as a girl's joke, that "a young lady fainted when told that over 300,000 men died last year, but was revived by the information that there was 19,000,000 left."

ONE CAUSE OF DEATH.

The pet goat of Mrs. Cassidy, of Roxbury, Mass., is dead. His death was due to the fact that he couldn't resist the temptation to butt his mistress as she was bending over the well drawing a bucket

of water. As soon as she was fished out of the well she ordered his instant execution.

BOYS KILLED BY EATING WILD PARSNIPS.

Under date of April 28, advices from Indianapolis, Ind., say: Near Boonville, five boys, while roaming in the woods, ate wild parsnips. Three of them died within an hour, and the fourth is not expected to recover. The fifth will probably survive.

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HYGIENE OF THE TORRID ZONES.

It is reported that Professor Oscar Lenz, the African explorer, attributes his health while in the torrid zones to his dietary rules. He never ate raw fruit or drank unboiled water, and lived mostly on rice, chicken and tea. He dressed in flannels.

TO INVESTIGATE INOCULATION FOR YELLOW FEVER.

The President has directed Surgeon G. M. Sternberg, United States Army, to investigate the merits of inoculation for the prevention of yellow fever, as practiced in Mexico and Brazil.

MEASLES AMONG THE INDIANS.

The Marine Hospital Bureau is informed that the Indians in the vicinity of Yuma, Arizona, are suffering from a severe epidemic of measles, which had proved fatal in sixty cases up to the 16th of last month.

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Communications.

THE QUALITY OF THE WATER SUPPLY OF PHILADELPHIA AS TESTED BY VITAL STATISTICS.*

BY RICHARD A. CLEEMANN, M. D.,

Member of Board of Health of City and Port of Philadelphia.

Chemists have attempted to define a standard by which water as a source of supply for drinking purposes should be accepted or rejected, but thus far without conspicuous success. As late as ten years ago, high chemical authority declared "that the Schuylkill water is about as good a water as one might wish for a large city," while a year before the same authority speaking of course through a different mouth-piece, found the water occasionally "totally unfit for use," and opined that unless some precautions were taken the visitation of some epidemic was certainly to be expected.

These are certainly very diverse views, but their discrepancy need not astonish us if we reflect that the most that chemistry can inform us with regard to an impure water is, that it contains or has contained an undue amount of organic matter. Whether the organic matter is animal or vegetable cannot be declared, and even if it is quite probable that the

contamination is from animal sources, the further question whether this animal matter is harmful or harmless is still in abeyance.

Yet the chemical analysis of water is by no means to be despised; for though, as intimated, the information it gives cannot lead to certain conclusions, it may serve to excite a suspicion which followed up by research in other directions will determine the rejection of an unwholesome water.

Sanitarians have come to consider the history of a water as of more importance than its chemical analysis; for laying aside the uncertainty of the precise nature of the organic pollution which chemistry may detect, now, in the reign of the germ theory of disease, it is believed that the disease-bearing microzemes may be borne along, in the waters of a river, for instance, long after the organic matter with which they were accompanied at the outset have been eliminated by aeration, subsidence or dilution. Chemical tests are blind to these morbid atoms, so that it is possible that a water to analysis chemically pure, may yet be a most dangerous article to be ingested.

The analyses of Dr. Charles M. Cresson, Albert R. Leeds, Ph. D., and others having demonstrated a threatening amount of organic matter in the waters of the Schuylkill; the history of the river water as it flows from its mountain sources to our reservoirs has been carefully studied. The latest research in this direction which I have seen, is the "Report of a

*Read before the Penna. State Sanitary Convention.

Sanitary Survey of the Schuylkill Valley," made by Assistant Engineer Dana C. Barber, under the direction of Col. Wm. Ludlow, late Chief of the Water Department of Philadelphia. From this carefully prepared report, we learn that the river Schuylkill, in addition to the pollution of its waters in its upper portion, with a total drainage area of 1863.9 square miles, receives in a distance of 60 miles from the city of Reading to Fairmount dam, the water closet drainage of a population of 22,000 souls and the waste water drainage of 63,000, besides the refuse from scores of manufacturing, drainage from cemeteries and the like.

This is not pleasant reading; it convicts the beautiful river by circumstantial evidence of murder. Now, in this extremity, can we bring any direct testimony to bear on the case through a study of vital statistics? There is a homely adage which says the proof of the pudding is in the eating; perchance the test of the water is found in the drinking.

An impure supply of drinking water is said by those who have studied the subject to have the general effect of sapping the constitution of those who use it, making them less resistant to the inroads of disease of whatever kind, an effect reflected in a high general death rate.

During the last fifteen years (1871-1885 included) there have been 267,603 deaths recorded in the city of Philadelphia; this mortality gives, according to my calculations, a death rate for the city of 21.87 deaths per thousand inhabitants living, a rate only fractionally different from that of London, England, which was, during that period, the healthiest large city in the world. It is difficult to reconcile this rate with the theory of a grossly polluted water supply. But I have gone a step farther (table A), dividing the same period of fifteen years into lustra of five

years each. I find for the first lustrum a rate of 22.79 deaths per thousand inhabitants living; for the second, 20.63, and for the third, 22.26. From these figures it appears that the increasing impurity of the water is not reflected in an increasing death rate. This actually decreased for the second period though it increased again in the third, though not then rivaling that of the first period. It is only fair to say, however, and this is an instance of the difficulties met with in analyzing vital statistics, that a great part of the irregularity in the above ratios is due to the disturbing influence of the varying number of deaths from small-pox; if we eliminate these the respective death rates for the several periods will be 21.62, 20.37, and 21.85. Here there is a slight increase in the death rate of the last lustrum, but, as there was a much larger falling off in that of the second, no definite significance can be attached to it from the point of view of a deteriorating water supply.

But, a critic may remark, though the lethal influence of the water may be hidden in the general death-rate, it will surely come to light in an increased zymotic mortality. To meet this objection I have calculated the ratios of the number of deaths from zymotic diseases to the number of deaths from all causes during each of the five-year periods already named; they read in chronological order as follows: 25.62, 22.00, and 23.09, giving an even more marked diminution in the rate of the last period as compared with the first than was found while considering the general death rate only. If, however, we eliminate the disturbing influence of small-pox as before, we discover at last a progressive though slight increase in the zymotic death-rate as follows: 20.48, 20.82, 21.24.

But is this increase due to a higher death-rate from those diseases in the

zymotic class which are believed to be made more fatal by foul drinking water? To examine this question I have made a brief study of the deaths recorded from such diseases, namely, typhoid fever, diarrhoea, dysentery, cholera morbus and cholera infantum. Along with them I have considered the deaths from "enteritis," including under this term the deaths classified in the Health Officer's Report, as from inflammation of the stomach and bowels, and congestion, hemorrhage and ulceration of the bowels. For a special reason, which will appear hereafter, I have included the deaths from malarial fevers also. (Table B.)

Now, the combined death-rates of these diarrhoeal diseases (expressed in the number of deaths to the 10,000 inhabitants living, instead of to the usual number 1,000), read 29.29, 25.80, 26.62 for the three five-year periods beginning with the earliest and proceeding in order. The decreased death-rates in the later periods is not in accord with the theory of a drinking-water becoming more and more impure from year to year.

Of the individual diarrhoeal diseases, diarrhoea, dysentery, cholera morbus and cholera infantum have each markedly decreased in fatality during the last fifteen years, while typhoid fever, malarial fever and enteritis have caused many more deaths.

From the circumstance that the very large majority of the deaths classified under enteritis were gathered from under the heading, "inflammation of the stomach and bowels," and the further consideration, which I established by looking at the records of the Health Office, that the deaths under the latter caption were in more than half the cases of children under two years of age, and occurred chiefly in the summer months; from these considerations, taken in connection with the coincidence in the last two lustra of

the decrease in the recorded number of deaths from cholera infantum, it is not unreasonable to suppose that some physicians use these names of disease as interchangeable terms. If this is true, the gain in the number of deaths from enteritis is balanced by the loss on those from cholera infantum; though indeed if the deaths from both causes are added together, the sum gives still a lower death-rate from these combined diseases than obtained ten years ago.

Therefore the point arrived at after this brief survey of statistics is this: That with the exception of typhoid fever all diarrhoeal diseases are less fatal in Philadelphia now than they were from ten to fifteen years ago. The deduction is that the Schuylkill water is more free from disease-bearing pollution than it has been in the past, unless possibly as regards the poison of typhoid fever.

But some one may say, that is the capital point; it is the prevalence of typhoid fever which condemns the water supply. Yet typhoid fever causes a good many deaths in some other cities where there is no suspicion of a polluted water supply. There is, however, I believe, a widely-spread though erroneous opinion that Philadelphia is afflicted much beyond other large cities in this country from the dread scourge of typhoid.

Let us examine for a moment this point. Take at first the city of New York, the city most closely allied in number of inhabitants and general climatic conditions to Philadelphia. Looking over a comparative table of vital statistics prepared by the Health Department of the former city for the year 1883 (the latest I had at hand), I found the number of deaths from typhoid fever in New York city set down as 471. For this year the typhoid mortality in Philadelphia was 579. Considering the larger population of New York, about one-third

more, this appears at first sight very serious in Philadelphia. But looking at another part of the New York report, I discovered under the heading "Remittent, Intermittent, Typho-Malarial, Congestive and simple continued fevers," 525 additional deaths recorded. Now in the Philadelphia mortality list the deaths from typho-malarial and continued fevers are classed and counted along with those from typhoid. It seems to me fair to presume that the death rate from remittent, intermittent and congestive fevers does not differ very much in the two cities, and under this presumption a fairer comparison of the typhoid mortality of the two cities is obtained by placing together for each city the deaths as recorded from typhoid and malarial fevers. The number of deaths from typhoid fever plus malarial fevers in New York* in the year 1883 was 996, and in Philadelphia 691. These figures, estimating the population of New York at 1,317,691 inhabitants and that of Philadelphia at 967,641, give the combined death rate from typhoid and malarial fevers in New York as 7.55, and in Philadelphia 7.61, almost identical values. From the same report I found against a mortality from typhoid fever alone in Philadelphia of 6.38; Chicago had one of 6.22, and Boston one of 5.17. Philadelphia is not then so very far ahead of some other large cities of this country in typhoid mortality, and for the year quoted, which I have not taken as an exceptional one, the death rate from typhoid fever was about the same in Chicago and Philadelphia, though the water supply of the former city is considered to be ideal in its purity. Is there any other general cause more likely than contaminated water to produce the typhoid mortality of Philadelphia? Discussing this question in a report on *Meteorology and Epidemics*, I made several years ago, I claimed that the unequal distribution of the deaths through the different wards of the city, giving the appearance of a large number of small local invasions of the disease was opposed to the view of typhoid-poisoned water, which should, in a large population, quite equally distribute

the deaths among the several municipal divisions of the town. It seemed to me more probable that the custom of storing excreta, instead of removing it by an efficient system of sewerage, was the cause of the evil.

Dr. Henry Leffman, in an address before the County Medical Society, going over the same ground for the typhoid mortality of last year, also rejected the theory of typhoid contamination of the general water supply. The final conclusion is that the study of vital statistics negatives the idea of the pollution of Schuylkill water.

Now, gentlemen, what has been my purpose in reading this paper?

To demonstrate as absurd the present agitation in regard to the pollution of the Schuylkill water? Not at all. But from my position in the Board of Health of Philadelphia, I have been asked more than once by persons convinced of the impurity of our drinking water to give them statistics to prove that fact. I have replied that statistics would not show this; but as the question is still urged, I have made this demonstration; but I need not tell practical sanitarians that statistics are gross machinery to sift out the etiology of diseases.

But I had another object in view and that the chief one. To combat, feebly it might be, yet earnestly, the spirit of exaggeration with which the impurities of our drinking water are spoken of.

Thanks to the industry of sensation-alists, the water of Philadelphia has become a by-word of reproach, a very stench in the nostrils of the nation.

I trust that I have at least shown you that such utter condemnation is entirely uncalled for. Yet it is a duty which we owe to ourselves, as well as to those who come to visit us, to put the purity of the water supply beyond doubt; it should be like Cæsar's wife, above suspicion.

It is, therefore, much to be desired that the counsels of those who urge a new supply from the head waters of the Delaware, or other equally pure source, will prevail.

TABLE A.—Deaths in Philadelphia, from all causes, from zymotic diseases, and from special zymotic diseases; with population for the years 1871-1885 inclusive; and the same consolidated for the three periods, 1871-1875, 1876-1880, 1881-1885:

YEAR.	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1871-1875	1876-1880	1881-1885
POPULATION.	69317	70861	725907	745702	760197	777752	795087	812382	829677	846980	868000	886558	907041	927995	949431	3629535	4061938	4539906
DEATHS FROM ALL CAUSES.	15185	15887	15224	15238	17805	18892	16004	15743	15473	17711	19515	20650	20076	19909	21392	82739	83823	101641
DEATHS FROM ZYMOTIC DISEASES.	4173	6299	3134	3005	4500	1777	3639	3303	2867	3810	5136	4573	4768	4373	4481	21301	18446	23334
Smallpox.....	1505	2180	39	16	56	407	155	0	6	424	1336	314	173	35	3	4256	992	1861
Measles.....	41	140	29	17	12	53	69	12	8	108	17	19	58	96	131	339	250	321
Scarlatina....	262	168	309	332	1032	328	379	554	386	290	486	310	561	540	373	2128	1887	2272
Diphtheria....	143	141	106	181	656	708	458	461	321	323	457	933	1006	689	600	1229	2274	3676
Croup.....	264	281	188	196	429	386	338	388	291	303	317	466	500	589	753	1361	1706	2625
Whooping Cough	81	155	95	74	125	88	81	109	103	101	113	63	86	107	141	530	482	513
Typhoid Fever	313	341	338	408	400	771	542	401	341	456	645	650	579	662	610	1880	2559	2150
Typhus Fever.	37	35	31	26	21	27	15	9	1	23	12	3	36	2	1	150	75	54
Erysipelas....	57	76	89	83	87	81	77	67	83	63	75	64	85	69	88	392	371	381
Puerperal Fever	28	22	28	65	80	54	50	47	41	25	39	22	24	28	41	223	218	151
Dysentery.....	97	75	73	49	78	78	79	51	60	98	53	72	72	59	58	372	366	314
Diarrhœa.....	174	179	163	141	151	119	123	121	107	129	141	156	137	142	143	808	629	719
Cholera Infantum	829	1005	1068	859	992	1173	979	700	801	801	902	871	878	775	971	5531	4547	4307
Cholera Morbus	33	111	67	51	47	35	13	33	27	73	48	64	29	31	44	309	211	216
Material Fevers	59	55	30	51	48	47	40	46	39	49	92	114	112	67	66	237	221	451
Rheumatism..	40	31	45	37	53	53	57	49	34	40	57	56	54	44	60	206	213	295
Cerebro-spinal Meningitis	44	125	238	80	83	85	56	90	62	78	90	51	50	124	87	570	371	402
Other Miasmatic Diseases	40	54	77	57	122	109	74	6	106	159	117	102	176	159	166	350	511	730
Enteric Diseases	20	24	33	40	24	31	43	34	37	24	48	33	46	54	39	141	172	236
Dietic Diseases	44	90	57	52	78	87	51	44	42	84	86	138	101	100	93	321	308	518
Parasitic Diseases	0	10	11	10	16	18	0	15	15	9	0	0	0	1	0	47	57	1

TABLE B.—Deaths from the several diarrhœal diseases and malarial fevers with their ratios per 10,000 inhabitants, during the three periods 1871-1875, 1876-1880, 1881-1885, and totals:

YEARS.	1871-1875	1876-1880	1881-1885	RATIO TO 10,000 INHABITANTS.		
				1871-1875	1876-1880	1881-1885
Typhoid Fever	1880	2559	3150	5.17	6.39	6.96
Malarial Fevers....	237	221	451	.65	.54	.99
Diarrhœa.....	808	629	719	2.22	1.54	1.58
Dysentery.....	372	366	314	1.02	.90	.69
Cholera Morbus....	309	211	216	.85	.51	.47
Cholera Infantum.	5351	4547	4397	14.74	11.12	9.68
Enteritis.....	1686	1951	2831	4.64	4.80	6.25
Totals.....	10643	10484	12078	29.29	25.80	26.62

INFLUENCE OF DIET ON HEALTH.*

BY ALFRED K. HILLS, M.D., OF NEW YORK CITY.

The first duty of the physician to the public being the prevention of disease, there can be no more important subject for our consideration in this connection, than the "influence of diet upon health;" and none can more fully appreciate this factor than the physician who is constantly studying the causes of disease and their probable prevention.

It is universally admitted that the great majority of non-contagious diseases are due to mal-nutrition; and this is largely occasioned primarily by errors in diet which would be preventable through a knowledge of the relative values of foods as nutrients, and of their requirements for digestion.

The question which I desire to bring before this honorable body for discussion at the present juncture is, *How shall the public be instructed as to "the influence of diet on health?"*

We may answer this query in several ways, and perhaps no single method may be sufficient for the purpose, but the combination of all may accomplish considerable!

The *first* method should be commenced in the home, at the very cradle, but this has many drawbacks, chiefly among which is ignorance on the part of parents; and here under existing circumstances, the office of the physician comes into view, and leads us to the second plan, which will be entirely dependent upon the physician, and involves time and patience as well as knowledge on his part.

Much can be accomplished on the part of the physician, as we know from personal experience; but neither of these methods would speedily bring that benefit to the great public to which we aim, and thus we are introduced to the *third* and more important suggestion, viz: That the subject be made a special study in our educational institutions—even to the Kindergarten—graded to suit the age of the pupil, and so complete that when a scholar graduates from school, nitrogen will be known from carbon, their relations to each other will be understood, their offices in the human organism will be appreciated, and their association as foods be as thoroughly familiar as the language which they have been taught to speak! The young and impressible mind is ever ready to grasp an idea strikingly presented and forcibly illustrated, especially when it is shown to have a bearing

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upon health and happiness. Well do we remember an instance in which a man admirably adapted to such work, spoke words to a class of children which never will be forgotten; and they dealt only with the most common habits and duties of every-day life, in a most simple manner, which could be understood by all.

We are well aware that there are some difficulties in the way of our proposition, but they seem to us surmountable; and should the subject meet with sufficient favor at your hands for you to appoint a committee to consider it, we have reason to think that a practical solution would be reached.

Doubtless in the beginning the subject could be interwoven with the text of existing school-books; and in the higher departments, where physiology and hygiene are taught, even to a most limited extent, additions could be made to these text-books, and the subject made interesting and as compulsory for graduation as other less important branches.

We are quite aware of the indifference, ignorance and carelessness which prevails, even in the medical profession, as to the "influence of diet on health," not alone as regards their own individual conditions, but also as to that of their patients; and is it to be wondered at that the great public which is not supposed to know much of the "influence of diet on health," should remain in its ignorance, particularly when the medical adviser ignores the subject entirely as one with which he has nothing to do?

Medical colleges of course are expected to provide education upon so vital a subject, and graduates should be required to undergo thorough examination in it.

We regret to be compelled to admit that hygiene holds a most insignificant position in the curriculum of many medical colleges, and if students are examined at all, it is in the most superficial manner,

thereby impressing them with the idea of its insignificance.

This could be remedied, in a degree at least, if the colleges themselves could be made to feel their position regarding it; and it is such bodies as the one which I have the honor now to address, which can have the most influence in bringing about this desideratum. The "practice of medicine," as it is termed, or as we prefer to put it—*the office of the physician*—certainly demands something more than the mere prescribing of drugs. The physician should be capable of advising his confiding patients respecting all matters bearing upon physical conditions, as well as many which may be termed mental in their nature; but few are competent by education or otherwise to attempt it. We think that a system of training in the ordinary affairs of life is greatly to be desired, and that our institutions of learning could organize a department which would be practical and useful, by teaching people *how to live*; and the course should be insisted upon, at least with those who would enter the profession of medicine. Then might we expect the public to entertain a higher appreciation of the "influence of diet on health," and all allied subjects as well; then would the public health begin to feel a subtle influence which would be most pervading, and which would in time work a wonderful change in our mortality tables, as well as in the happiness of the people.

Ignorance upon the subject of which we are speaking tends, as is the case always under such circumstances, to partial views; and hence we have sects in diet,—as in other relations in life—such as the "vegetarian" and other hobbyists. The great tendency of man is to find a hobby and ride it, oftentimes to death, and the sooner this goal is reached perhaps the better. It is to be

regretted that educated men sometimes lose balance and urge, for instance, upon all alike an exclusively nitrogenous diet in health,—for example the meat diet, or a single meal in twenty-four hours, or eating at too frequent intervals, and a host of other extreme measures, which may be excellent in individual cases of disease, but which may have a most pernicious “influence on health” when adopted by such as are in normal condition.

Physiology teaches us and experience proves that a mixed diet is the best calculated to maintain the body in health; and it has been demonstrated that man under ordinary pressure requires nutrition in the proportion of two pounds of bread (made from ordinary white wheat flour), three-quarters of a pound of meat, with one or two ounces of butter in twenty-four hours.

While too much nitrogenous food leads to an excessive amount of urea and uric acid, it is also a well-known fact that animal life cannot be long preserved on an exclusive diet of fat and starches, as the tissues would soon become worn and wasted, and death from inanition would be the result.

There is a mistaken impression in the public mind as to the sources of sugars and their effects upon the human organism. The fact that there are different varieties of sugar, and that they differ widely in respect to digestibility, is either unknown or entirely lost sight of! Sugar—although not entering into the composition of the tissues—appears to play an important part in the production of fat and the development of animal heat; and the fact that *all starch is changed into a low form of sugar*, which is easy of digestion, and upon which *we should depend chiefly* for our carbo-hydrates, should be constantly urged upon the public ear! Cane sugar which is agreeable to the taste of so many, and is so

enticing in its sweetness, behaves as a foreign body in the intestinal canal, until it has been converted into glucose; but this conversion is principally intestinal, the gastric juices producing little effect in this direction. It is evident that the task of digesting cane sugar is not an easy one for the organs involved, and we firmly believe that the “influence on health” of cane sugar is under-estimated, and that the indiscriminate use of it in large quantities, as it so commonly is, is a source of no inconsiderable injury. The substitution of glucose for cane sugar, now we are told becoming quite universal for many purposes, is to be regarded we think as a benefit rather than otherwise.

It should be generally known that one of the most important agencies in the digestion and assimilation of food is *water*, and that seventy-five per cent. of the human body is composed of water, and that four and one-half pounds is daily thrown off by the healthy body, and that a diet largely nitrogenous will tax the system severely, unless a considerable quantity of water be taken for the purpose of getting rid of the waste. It is estimated that a full-grown male adult requires fifty-two fluid ounces of water daily, an organized structure will not perform its function without its due proportion of this agent. The evils of over-preponderance of fluid in the system should be guarded against in the interest of the solid elements, although the dangers from this source are far less than from too little fluid.

It is cruel to neglect to provide children with cold water to drink at frequent intervals, particularly in hot weather, no matter how they are being fed. If the thirst is allayed by this natural diluent, the child may refuse food which is only being taken to relieve the parched mouth, and is not demanded and will not be tolerated as nutrition.

The public must be taught that digestion is a process of solution by hydration ; that to convert starch into sugar a molecule of water must be added under the action of a ferment, and that a peptone is produced by a similar process.

It may be truthfully said that the majority care little what they eat, so long as the appetite be satisfied ; but they do care to be healthy, and above all that their children should grow up strong.

The multitude will ultimately be attracted by the gain which is to be obtained from good food, rather than the enjoyment which is to be expected in taking it ; but they will not appreciate the subject fully until made to *know* that health and strength depend upon diet, that appetite often is subservient to cookery, and that the stomach should not be crowded with pabulum which has reached there through an excessive and unnatural tickling of the palate. Then shall we get rid of excess in condiments, of the desert, which is an abomination to our age ; and people will learn to eat fruit in its natural state, without the addition of cane sugar.

We feel that the great majority are underfed because of the lack of knowledge of the "influence of diet on health !"

Some are starving on an excessive quantity of improperly selected foods as to quality, while others are suffering from a mistaken notion as to the needed supply.

It is a pleasure to note the constant advance which is being made in the preparation of foods suited to infants, and it is certainly encouraging dietetically to know that mother's milk can be imitated so successfully.

It is also an important fact dietetically, that predigested foods can be produced which are both perfect nutrients and quite palatable as well. These peptones fill an important place in the dietary,

even of the healthy, for at times one in health really requires food which shall not tax the powers of digestion ; as for instance when one has to undergo severe mental or physical strain, or when one is too tired from any cause to expect digestion to be normally performed. We have used these articles in the place of wine or other alcoholic stimulant, on many occasions with great satisfaction, and they may be taken at bedtime with great benefit as well as with impunity. We look upon them as excellent promoters of the "temperance cause," as well as of the public health in general !

It has been asserted upon eminent authority that the human race is undergoing a great change, a leading manifestation of which is the growing intolerance of alcohol ; and we hope it may be true, for wine-bibbing has an important bearing upon health and in many circles is a part of the diet. We do not underestimate the value of alcohol in its various combinations, both as a medicine and under certain circumstances as a substitute for food ; but it should be intelligently prescribed, in accordance with reliable indications, and not be allowed to affect the "influence of diet on health" by reducing the quantity of food required. A person in perfect health doubtless needs no alcohol, and consequently this stimulant should not be resorted to as a beverage, but rather should be kept in reserve for an emergency, when it will prove equal to the task. In a state of health alcohol is liable to interfere with the appetite and with digestion, and it is only in this connection that we propose to consider it for present purposes. The circumstances which have gained for this agent its position in our dietary tables are well-known, and belong to the domain of therapeutics.

We have found that the various combinations in which alcohol is found associ-

ated require careful study and individualization, and we cannot agree with the inference of some that it is the *water* and not the alcohol and other ingredients of the admixture which is alone to be credited with the power of sustaining life, or of giving that impetus which nature requires to enable her to stem the tide of disease and to advance in the direction of recovery. It is a well-known fact that distilled alcoholic liquors produce influences upon the sensorium and upon the process of digestion quite at variance with those articles which are the product of fermentation, and this fact should not be lost sight of in our study.

While brandy, whiskey, and the like excite belligerency and irritate the mucous membrane of the stomach at the expense of nutrition in those who imbibe them too freely, it is equally well known that wines, ales, &c., even when taken in sufficient excess to produce inebriation excite an entirely different condition of the sensual faculties as well as having an entirely different effect upon the gastric function.

The poor wretches given up to absinthe-drinking suffer from a peculiar train of nervous symptoms, the most prominent of which is epilepsy of a remarkably severe character. The last moments of the absinthe-drinker are truly horrible. Absinthe, besides alcohol, contains several ethereal oils, of which the most important is the oil of wormwood. It has been often observed that the use of this beverage results in disorders widely differing from those caused by alcohol alone; and the oil of wormwood has produced, in animals, tetanic convulsions similar to the epileptiform convulsions which affect absinthe-drinkers.

We regret to say that this habit is taking a strong hold in this country, especially with women; and its influence upon health by decreasing the appetite

for good healthful food, is of great importance and should not be overlooked in the consideration of our subject.

Physiological experiments indicate the necessity for a more careful study of alcohol and its relations to the gastric function. It has been found that the digestion was not only retarded by its introduction into the stomach of a dog, but that the secretion of gastric juice was entirely suspended for a time by its use in strong doses. This condition was probably induced by its physical properties as an irritant-corrosive, rather than by any other influence.

These facts should teach us that the introduction of any toxic agent into the stomach in quantities sufficient to paralyze their natural functions, is entirely out of the question from the standpoint of scientific practice. Alcohol when taken upon an empty stomach, first increases the appetite; but if the indulgence be continued, it gives rise to indigestion and entire loss of both desire and relish for food, together with gastric irritation and intense thirst, although in some instances not a drop of water can be retained.

Because of the profound influence of alcohol upon the functions of digestion and assimilation, it is incumbent upon us to trace out its workings in this all-important sphere with especial care. The pathological lesions dependent upon a long continued use of alcohol are too well known to require consideration for present purposes.

We feel that our subject is too immense and pervading, to do it justice in the few short sentences which we have aggregated, but the purpose of our essay is only to offer suggestions which may bring out discussion which I trust will follow, to the end that the "influence of diet on health" may be more fully appreciated, and that the public may be taught to

realize that health and all that necessarily follows such a state, must be dependent upon *what* they eat!

THE HYGIENE OF THE HAIR.*

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The hair absorbs considerable of the thoughts of mankind. I do not mean to infer that thought-absorption is one of its physiological functions, but to those who are so fortunate as to be blessed with a luxuriant growth of hair it is a source of pleasure, pride, and vanity, as its loss or deficiency occasions much anxiety and chagrin. To the youth the first appearance of a hair-follicle on the upper lip is not only an indication of dawning manhood, but also the signal for the purchase of a complete barber's outfit (barring the scissors)—razor, shaving mug, brush, etc.—and their assiduous use. And, as years advance, an exuberant beard or moustache is the result of this cultivation. To those middle-aged, or growing old, the first sign of baldness warns us that we are no longer young, and can disguise the fact no more, although various and ingenious are the devices made, in combing and arranging the hair, to hide, as it were "the nakedness of the land." A good head of hair is somewhat of a rarity at the present day. All desire to retain their hair, grieve to see it falling out, and fondly cherish the few remaining locks. We have but to enter a barber-shop to verify the truth of this remark, and watch our fellow creatures getting a hair-cut. Observe, for the most part, how careful we are in giving directions to the barber what manner of cut we want, how punctilious about the part and the way it is

brushed, how we scrutinize through the mirror before us his every manipulation in the tonsorial art, and how self-satisfied we feel when the finishing touches are completed—oiling, combing, brushing. How proudly we stand up and look at ourselves in the glass when all is over! While all desire to keep their hair, few do the right thing to retain it. One naturally runs to the barber, but generally the barber is the hair's worst enemy. The majority of people consider when they keep the hair a respectable length, neatly brushed, combed, and oiled, and have an occasional shampoo, that they are doing all that is necessary. As far as appearance is concerned this may be so, but it will not add much to its health and preservation.

The hair should be looked to from infancy up. To disregard this fact is to render one liable in after-years to a diseased condition of it, or a deficiency. The infant's head is often neglected, and not properly cleaned. As a consequence, a thick, scurfy crust often forms upon the scalp. This irritates the skin, and gives rise to an eczema of the head. This should not be allowed to occur. The baby's head should be washed in lukewarm water with Castile soap twice or three times a week. This should be practiced from birth up, and the hair daily brushed. In very young infants the softest brush should be used. As the child increases in years, two should be used—a rather harsh one first to loosen the dirt, dried sebaceous material, and epithelial scales from the scalp, and brush it out; then a soft brush to smooth the hairs out.

A fine comb should not be used on a child's head, and a coarse one only to part or lay the hair. Too great care cannot be lavished on the hair of children.

With the adult's hair, as with the child's, cleanliness is one of the first requisites. The scalp should be thoroughly washed

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at least once a month. One of the best cleansing substances is the yolk of an egg ; or the white of an egg answers just as well, and is more readily removed. This should be well rubbed into the roots of the hair, then washed out with tepid water and Castile soap, rinsing with clear, cold water. The scalp should then be thoroughly dried by brisk rubbing with a towel. This brings a roseate glow. If too dry, a little pomade may be used. Cocoa-nut oil is the best. Purified beef-marrow might be used, but vegetable oils are the best to use, as they do not so quickly become rancid. Bear's oil and hedgehog oil are not what they are reputed to be. A proper amount of pomade is not only harmless, but useful to some scalps, especially to those with little oleaginous material to keep the hair supple and glossy. When used in excess it becomes harmful, as it tends to cover in dirt. A head besmeared with an excessive amount of oil is not only deleterious to the hair, but often does most serious damage to my lady's tidy, and often leaves one's mark on the wall—if not on the world. Purchase pomade or oils in small quantities, as they are liable to become rancid quickly, and this is very pernicious. Use them without scent, as this hides their rancidity. If you desire a scent, a drop of eau de Cologne may be added to the oil before using it. Oil is best applied immediately after washing the hair ; it penetrates quicker then.

When there is a tendency to the accumulation of scurf, a mixture daily of equal proportions of 80 per cent. alcohol and aromatic spirits of ammonia with a quantity of soft water is an excellent wash. This makes an excellent shampoo. The fixed alkalies, such as borax, salts of tartar, soda, etc., should not be used ; they tend to diminish the natural elasticity and flexibility of the hair.

A wineglassful of aromatic spirits of

ammonia added to a basinful of water is very cleansing and refreshing. Care should be taken that it does not get into the eyes. The shampoo as given by the barber is too rough and vigorous, and the conglomeration he puts on your head afterward is anything but beneficial. While one performs daily ablutions of the face, hands and body, the head is generally left out. This should not be ; it is as necessary to wash the scalp as any other portion of the body. The hair should be brushed daily. Too much violence must be guarded against. It should be brushed gently in the direction in which it lies. A harsh brush should be used to cleanse the scalp of dust and dandruff, and then the hair-shafts should be smoothed and polished by means of a softer brush. The scalp should receive a roseate glow. This insures quicker circulation in the follicle about the hair-papilla, and hence the growth is invigorated. Hair tonics have the same effect upon the skin, viz., a stimulating effect upon the skin capillaries. Morning and night, before retiring, is the best time for brushing the hair. Too hard brushing tends to produce dandruff. In brushing, the object is to cleanse it from extraneous materials, such as feathers, dust, dandruff and concrete sebaceous material which often oozes out upon the scalp, to make it smooth, and to bring truant hairs into the right place, and set at harmony discordant filaments.

Friction polishes the hair as well as bandoline or ointment. The end we seek in building up a scanty hair crop is a proper amount of blood-supply, through friction and hair tonics. The appended is an excellent hair tonic :

Carbolic Acid,	half a drachm.
Tincture of Nux Vomica,	...two drachms.
“ of Red Cinchona,	...one ounce.
“ of Cantharides,	...half a drachm.
Cologne Water,	} of each enough to make a
Oil of Cocoa,	} four ounce mixture.

Apply once or twice a day to the scalp by means of a soft sponge. This will prevent the hair from falling out if it does not produce a luxuriant crop.

Fine-toothed combs should be avoided, and used only from a sportsman's point of view—"to catch game." They have a tendency to peel off the scarf-skin and leave a denuded surface below, which is apt to end in disease, pityriasis, etc. Dr. Leonard gives the following trite remarks in selecting a brush or comb:

"A hair brush or comb with silvery bristles or teeth too sharp is not good; the scalp will be scratched by the one and the hair broken by the other. A proper brush is made up of bristles varying with the individual as regards the stiffness of them. The clusters should be evenly set into the back, equidistant from each other, so that the whole surface of the scalp to which it is applied will be touched by some one of the bristle brushes. Then the clusters should be made up of bristles of slightly unequal length, so as to still further favor the brush in covering every part of the scalp; by this means every hair will be rubbed down on all sides, and there will be no streaks or spots of the scalp left untouched.

"A proper comb is one whose teeth are even and regular, with points not sharp, but rounded. It should be held up to the light, so as to detect any splitting or roughening of the teeth on the sides; for if they are so roughened, injury to the hair through breakage of the shaft will result. Should the teeth through any cause become split, as you value your hair, the offending members should be carefully cut from the comb; the slight space on the scalp that would thus remain untouched would be of no moment. Wire brushes are nothing more than combs. They act as a stimulant to the scalp, but are not equal to a good bristle brush."

A good supply of oxygen is necessary for the healthy growth of hair; the head should be well aired. The hat has made sad havoc with many a caput. Endeavor to go bareheaded as often as possible. When walking, lift the hat off the head frequently, and, if the sun is not too strong, hold the hat in your hand awhile. The blue-coat school-boys formerly of Christ Church, London, who wear the costume of Edward VI., go bareheaded the year round. They wear no hats in the coldest days of winter. They are remarkably healthy, and have a redundant crop of hair, which lasts them a lifetime. If we must wear a hat, let it be light in texture and well ventilated from the top. One reason that women keep their hair longer than men is, that their head gear allows of better ventilation. Business men sometimes wear their hats in their office, or have a special hat which they put on. This is very injurious. The brokers of Wall street are noted for wearing their hats indoors as well as outdoors. They are also notorious for having bald heads. This may account for it. When the head is well shorn of its locks this does not apply.

The hair should be cut regularly about once a month. Frequent cutting is generally said to make it grow quicker. Dr. Pincus, of Berlin, holds that it diminishes its growth. The ends of the hair split, and require to be cut off. Sharp scissors should be used. Some filaments grow faster than others, and need to be cut back; others are impoverished, and are better brushed out or extracted. The beard should not be shaved during its development. During youth the natural growth should not be disturbed. Shaving causes the single hairs to become prematurely strong and hard. It also alters somewhat the color of the beard, giving it a tendency to turn red or brown. In middle age this does not hold. Oil and

brush may be used on the beard according to inclination. I have often thought it would be well if the barber would put his razor in a weak solution of carbolic acid after shaving each customer, and thus prevent the danger of infecting them with some dread disease, barber's itch, etc. We have scriptural authority for wearing the hair short. St. Paul says: "It is a shame for a man to wear long hair." Poets, artists, and many prominent men do not seem to heed this sacred injunction. There is an old canon extant, dating as far back as 1096 A. D., which declares that they who wear long hair shall be excluded from the church while living, and not prayed for when dead.

With regard to the ladies, their hair should be brushed rather than combed daily, its tangles carefully unraveled, its split ends cut off, and, when done up, it should be bound in as easy rolls and coils as possible. One reason for this is to allow as free ventilation as possible for the scalp; the other that you may not break the hair or strain the roots by tight tension upon them. Twisting or tight binding should be avoided. A persistent mechanical pressure on the shaft, by obstructing the flow of oleaginous fluid designed to soften it, tends to dry those portions which are beyond the ligature. Ladies should loosen their hair, well every night before retiring. Crimping, the use of curling-irons, and bleaching the hair must be avoided. For invalids, or those confined to bed, the hair should be oiled daily, and then combed with a coarse comb. The skin should be washed twice a week with a sponge and a little soapy water. The water may be either cold, lukewarm or warm.

Loss of hair is generally caused by a permanent irritation. In adults, heavy head-covering or coiffures may cause this irritation. Those having weak hair should

avoid pads; they injure the hair, and bring on headaches.

A daily shower-bath on the head is injurious. Lotions should not be used; most of them contain lead. They have been known to cause paralysis. Dyes are very deleterious. The least harmful are those containing iron or nitrate of silver.

Tiring brain-work, strong mental agitation, silent grief, continued disturbance of sleep, exercise a reaction on the growth of the hair. In cases where there is delicate health and a deficiency of sebaceous substance, tincture of bearberry renders the hair soft, glossy and flexible.

A NEW FACTOR IN ATHLETICS.

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It is an everyday commonplace, but one which everybody has practically forgotten, that no form of animal life is possible except by means of the incessant respiration of diluted oxygen. Tanner managed to survive forty days' abstinence from every form of solid food, but he constantly absorbed, utilized and relied on this invisible pabulum, and by it was enabled to undergo his severe but self-imposed ordeal. Under the law of evolution and selection, had he and other fasting cranks been regularly brought up on wind diet, their progeny—had such a calamity befallen the world,—might have been enabled to go on with this abstemious practice, to the utter ruin of the whole boarding-house system!

What is this wonderful fluid in which we at all times, waking or sleeping, day and night, remain as in a vapor bath, and without which no man could survive longer than a very few seconds? The name *oxygen*, scientifically speaking, is a glaring misnomer. It signifies only "acid generator,"—as if its sole office were the production of vinegar and aqua

fortis. Priestley more aptly named it "vital air," which, though a far more accurate and suggestive title, is yet neither adequate nor classical. It should evidently have been named *Zoogen*, since without its aid there could have been no life of any kind; neither animal nor vegetable, mushroom nor mollusk. A recent scientific writer asserts that oxygen is by no means a simple element, as commonly supposed, but is in fact, a comprehensive compound which virtually supplies the basis of all material substances,—of the rocks, minerals and soils constituting the crust of this not too solid earth, of the waters beneath the earth, and of the spheres and atmospheres that people space. Another, studying its mysterious omnipresence and fairly incomprehensible nature, insists that it is, in truth, the soul of Nature, the veritable *anima* of Stahl.

The far-reaching significance and immense import of its original discovery, the revolutions in art and science, in human life and its dependencies, which are yet to center in that sublime revelation, are far from realized.

Priestley died at Northumberland in 1804, an exile from his native land, on account of some theological and other views which he held with too great pertinacity, and advocated with too much ability. Had this persecuted, vilified and only posthumously appreciated philosopher been also a prophet, and realized to what base uses "the grandest discovery of the age" would one day be made to contribute, perhaps his sensitive conscience and peculiar views would have prompted him to burn the grand secret in the same bonfire which bereft him of his home, his books, records, instruments, and manuscripts—the accumulations of the best part of his incomparably busy life!

History, in repeating itself is utterly

conscienceless; and now, that apparently purely scientific event bids fair to contribute more toward the future history of modern muscle-culture than perhaps any other scientific demonstration yet announced.

Following the isolation and description of oxygen, many curious and suggestive physiological experiments resulted. Lavoisier, the French compeer of Priestley, and the same who vainly tried to filch from him his fairly earned honor as a discoverer, demonstrated that by repeatedly immersing dogs, rabbits and other animals in an atmosphere of the gas he thereby induced in them a pronounced muscular tonic. Subjecting them to its influence for some weeks he found their flesh so firm—hardened, as it were,—that it was quite unfit for food. It became, as the saying goes, "as tough as tripe," or as the half-cooked steak at a fourth rate restaurant. Here was the keynote to a world of practical application; but there were no ears at hand acute enough to catch its full meaning; hence this practical application has never been made. It has taken a full century of scientific drifting and blundering before the most transparently apparent inferences could be traced. Even yet no scientific authority of note has had the necessary enterprise or temerity to exploit these unmistakable inferences in the face of this intensely superficial and feverishly commercial age. And stranger still, that class generally so prompt to seize upon every coigne of vantage—the professional acrobats, pugilists and athletes—have unaccountably overlooked, or but half availed themselves of their strongest ally. Muscle-culture by the ordinary means, such as systematic exercise, friction, kneading, beating and bathing—all indirectly contributing toward increased oxygenation, and chiefly valuable in proportion as they so contribute—has been pushed

to the verge of a semi-science. So, also, has the dietary of men in training for hard physical tests been made a very thorough study. Every pugilist, pedestrian, oarsmen, wrestler, base-ballist and acrobat has his professional trainer, who looks after and prescribes for him in even the most unimportant minutæ of his everyday physical habits, his daily food—and drink, too, when that is possible?—his exercise and sleep, his rubbing and bathing; yet none of them have half appreciated, let alone utilizing, the one source of genuine vitality culture. It is so rational and so strictly in harmony with nature's own methods that it is fairly self-suggesting; and it is more than surprising that through the suggestions of the medical profession it has not been turned to practical account by sporting devotees everywhere.

The Boston policeman who insanely dared the whirlpool of Niagara, unfortunately for the future of the crank business, escaped with his life; but the frightful narrowness of his escape so vividly impressed him that not all the bullion in the Bank of England would tempt him to a repetition of the ordeal. Yet, in time, his dare-devil feat may become comparatively tame and commonplace. So of the bridge jumpers. Perhaps Odium would have succumbed under any circumstances, since the autopsy in his case disclosed serious organic disease; nevertheless it is quite possible that notwithstanding the demoralized state of his liver and spleen, had he been carefully and scientifically prepared for his silly part in the serio-comic tragedy, which might have been not inaptly placarded:

FACILIS DECENSUS AVERNI, or
How Odium Cheated the Hangman!

He too might have acquired an ephemeral fame of the dime-museum stamp.

Nor is this vito-culture and muscle-hardening by any means restricted to the

comparatively useless training of hair-brained jumpers and swimmers. According to good authorities in physiology, pugilists, pedestrians, base-ball professionals, oarsmen, cyclists, athletes of every variety, one and all, will ere long seek and find in it strength, suppleness and endurance, for their trying tasks, and recuperation from wear and tear, after the battle. In fact, there is no restriction. Nature rains benefits and blessings alike on the just and the unjust, on the villain and the saint, the serious monk and the maudlin mountebank. Every class of persons called on to endure unusual strain, whether of body or brain, muscles or mental faculties, the lawyer preparing his master effort for the jury, or pleading before the supreme court; the editor bending over his telling leader; the poet with eye in fine frenzy rolling; the minister elaborating an ordination sermon—each and all of them, if they will, may more or less fully avail themselves of this most potential aid. In it they may find both inspiration and endurance; while the wearied and overworked, the jaded, broken and hopeless, everywhere, will invoke not in vain its genuine magic of restoration—the more enthusiastic dreaming, perhaps, that it may prove a realization of Ponce de Leon's long cherished vision, a veritable Fountain of Youth!

Medical men, as well as laymen, are forever harping on the benefits to be derived from a change of climate; whereas the chief differences between various localities consists in the varying degree of abundance and purity with which each yields oxygen. One of these days, no doubt, climate experts will be able to determine the salubriousness or insalubriousness of any given locality, by means of an *oxygenometer*. The genius who secures a patent for a successful instrument of this kind, will have no

further need of legacies from the old country.

Given, any two athletes, with all conditions essentially the same, except that one shall be thus scientifically and thoroughly *oxygen-fortified*, the other not, the one thus prepared is as sure to win in the contest before them, no matter what its nature, whether wrestling, rowing, batting, running or swimming, whether in the field or on the forum, as the morrow's sun to shine.

It is easy to compass a practical test. Let the skeptic apply to some one of the now numerous dealers who advertise "pure oxygen gas for medicinal purposes," bearing in mind, however, that much of that so announced is none too pure, and having first tested by the watch his normal ability to hold, not his tongue, but his breath, then proceed to inhale the gas, properly diluted, for the space of fifteen or twenty minutes. While thus permeated, or so to speak, saturated with oxygen, let him again test his augmented ability in the same direction. If the test be fairly made he will find that in this induced state of superoxygenation he can abstain from breathing, or hold the breath, three times as long as he could do prior to its use.

In the direction of scientific research we are far behind the East. In France, Pasteur has demonstrated that the hog cholera and some other forms of germ diseases are possible only when there is a lack of oxygen (anærobism). The treatment of sloughing ulcers has undergone a revolution. Poisoning by opium, belladonna and other deadly narcotics is being successfully met by the free use of the gas; the drowned are resuscitated; cholera and epidemic dysentery are combatted; and Russian physicians assert that hydrophobia itself, otherwise admittedly incurable, has been made to yield to this searching antidote.

The Brin freres of Paris have brought out a successful process for procuring this gas in unlimited quantities from the atmosphere. They have also made available to all Europe an oxygenated water which bids fair to eclipse, in good results and popularity, every table water now in the market. It has received the unqualified sanction of the French scientists and doctors, and it is claimed that it is a certain protection from cholera, diphtheria, dysentery and all infectious and zymotic diseases. It also relieves gout, rheumatism, and dyspepsia, as well as various kidney diseases.

A patent has recently been issued in this country for a "compound oxygen" water which is said to be even better than the French preparation. Hence we shall soon be enabled to renew our youth without leaving our own soil! Strangest and perhaps most important of all, it is said to materially diminish the appetite for alcoholic stimulants. If the claims set up for it are one-half true, the race ought to be on the eve of a benefit beside which all ordinary blessing will seem trivial enough. Thus, the temperance advocates may cease their frantic appeals to legislative bodies and political factions. It is not legislation but *oxygen* the drinking world needs; energizing oxygen, to overcome the lassitude and depression of spirits which drives men to the wine cup and women to the teapot! Let the St. John—Dow fanatics and women anti-saloonists abandon politics, throw pledges to the dogs, and fly to the laboratory. In this magic water who knows but they may find their talisman and shibboleth. Let them burn their futile ballots, and inscribe on their waving banners the cabalistic words, "*In (h) oxygen signo vinces!*"

HERR MOST CAN PASTE THIS IN
HIS HAT.

Soap is a wonderful civilizer.

IMPERFECT DEVELOPMENT OF FŒTUS ASCRIBED TO MENTAL EXCITEMENT.*

BY J. W. CHARLES, M.D., OF ARMOURDALE,
KANSAS.

One morning in September, 1874, I was called (about 3 A. M.,) in great haste to attend Mrs. H. (the wife of a prominent attorney) who was then in labor. I found that the lady was not expecting to be confined for some five or six weeks—that the labor was premature. The family was thus very much surprised when I made a vaginal examination and informed them that the termination of the labor was only a matter of a few moments.

Upon examination I found a soft, pulpy-like portion of the child presenting and came to the conclusion that it was a case of breech presentation; yet more careful examination showed that this soft pulpy mass was surrounded by what seemed to be a kind of shell of bony structure. This I could not account for. It was not more than half an hour ere the child was born—and a normal or natural presentation. The room being small and poorly lighted by a small lamp I could not even after expulsion of the fœtus determine what was the trouble; but after ligating the cord I took the child into an adjoining room, it in the meantime crying weakly, and there found that it was a case of imperfect development, there being a total absence of all bony structures which should cover the top of the brain—from the eyebrows straight backward to the ears and thence to the occiput there was nothing to cover the brain. This organ simply looked like a soft, bloody mass. There was also deficiency of the finger and toe nails, none of the phalanges being supplied. The child lived

only about one hour, and was not shown to the mother, she being exceedingly nervous.

Was there any special cause for this non-development? When the mother was supposed to be some five or six months advanced in pregnancy, she was one day suddenly informed by telegraph that her mother (some three hundred miles distant) was not expected to live and she was asked to come at once. The husband being in attendance in court could not accompany her, but she made immediate preparations to go. The news coming so unexpectedly caused her to become greatly excited and nervous; in fact, she seemed so completely overcome that she was unable to dress herself for travel. She seemed to be overwhelmed—in the greatest agony of mind and body, and when the train arrived she was so completely prostrated that she had to be carried into the car. In forty-eight hours she arrived at her destination, but remained in a prostrated condition for several days. She had felt the movements of the child several weeks before this trip, but never felt motion again until a few days previous to her confinement and had several times in the interval consulted her family physician, thinking the fœtus was dead. Yet she seemed to think the child was born several weeks before the termination of the period of gestation. To her great mental excitement the stunted growth of the fœtal head was ascribed.

The child was well developed in every other respect except those named, and would possibly weigh nine or ten pounds. It cried for some minutes after death.

The mother was delivered of two fine well-developed daughters after this trouble occurred, but three years ago she became insane and is now an inmate of the St. Joseph Asylum.

LADIES AS SANITARIANS.

MR. EDITOR:—I have noticed with great pleasure your untiring efforts to interest

*From the *Kansas City Medical Index*.

the public in the study of Hygiene, and while I know that there is no more popular maxim, than the old proverb "an ounce of prevention is better than a pound of cure," I also know, that there is no other wise saying, that is so universally neglected and overlooked in the daily habits of man. This fact, makes me sometimes almost despair of your final success, in causing men to take even a moderate interest, in preserving the greatest boon the Almighty has granted them, viz.: their health. Why not do as the greatest generals are often obliged to do, change your base of operations, and appeal to the *women*. They now manage our households, provide the necessaries of life for ourselves and our children, secure for us bright, clean, cheerful homes and make life worth living. Now, why should you not appeal to them to inaugurate and adopt the different necessary sanitary improvements that would make their homes healthy; teach them how to do it, and then rely on their good judgment and love of family to carry out the necessary reforms. If you had carpets, furniture, curtains or dress goods to sell, you would solicit the patronage of the women, and waste no time on the busy men; and why should not the same rule apply to sanitary knowledge, which is the most important article of housekeeping, and can be obtained at such trifling cost. Let me advise you to abandon the men. What do they care about their health or even that of their wives and children, when there is a chance to make an $\frac{1}{8}$ or $\frac{1}{4}$ on Pennsy. or Reading, or when there is a boom in real estate or dry goods? But the patient, careful, prudent, loving women at home, have no more anxious constant thought than the health of their loved ones, and would be only too happy to institute reforms if they were taught how to do it. Therefore, I say, appeal to the women; let your agents call upon every

mother in our great country, let them explain to her, that you propose to show the *women* how to remedy the defects in their homes, and alter their pale, sickly and *hollow-chested* children, into grand healthy men and women. Enlist their support and co-operation, and you will surely carry to the highest pinnacle of success, the grandest science that the world has ever known, and have the proud satisfaction of having helped (with woman's aid) to make man, what God certainly intended him to be, a Monument of Health. I will close with the assertion, that if you can get ten thousand women actively interested in Hygiene, we will soon have clean and well paved streets, pure water, good sewers and all the other blessings that we now vainly pray for.—E. W. G.

OPEN PARKS IN CITIES.

New York city has just been given power by the Legislature to spend not over \$1,000,000 in buying and laying out small parks in the crowded parts of the city. A board of five city officers, of which the Mayor is the head, is given authority to determine the site and size of these parks and to condemn land for them as is done in opening new streets, the board in question containing the same officers as are charged with street opening. Power is given to levy assessments where abutting property is benefited, but it is expected that the chief cost of creating these breathing spaces will go to the city. Nor could better use of the money of taxpayers be devised, says *The Press*, and we heartily agree with the sentiment. It will be well for our new and growing cities to take this matter seriously into consideration. If they would procure land while it is yet cheap and devote it to said purposes, it would be much wiser policy than to wait until ground in the crowded parts has become dear, as is now the case in our larger and older cities.

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Editorial.

TO OUR SUBSCRIBERS.

If each of our present subscribers would induce *one* friend to subscribe for "The Annals," they would greatly help in our work of sanitary education. To any subscriber who will send us a new name we will present a case in which the journal can be preserved, and in which, if desired, it can be bound at the end of the volume.

THE HYGIENE OF CHILD-BEARING.

We have pleasure in announcing that in our July issue we will publish a most valuable and interesting article on the HYGIENE OF CHILD-BEARING from the pen of Professor Theophilus Parvin, who is not only an exceptional authority, but as every one knows, a most charming writer as well.

OUR REPORTS.

In our issue for July we will publish a report on the various artificial foods for

infants and invalids, and will continue making reports of various articles offered for sale, in subsequent issues. These reports can be accepted as reliable, for in every instance, they will be made without the knowledge of the manufacturers. We buy the goods, have them analyzed and publish the results without fear or favor.

APPOINTMENTS ON THE STATE BOARD OF HEALTH.

Governor Beaver has appointed, and the Senate has confirmed, Mr. Howard Murphy, C. E., of Philadelphia, to succeed Mr. Rudolph Hering, C. E., who has resigned to take charge of the Water Department of Chicago, and Dr. J. H. McClelland, of Pittsburgh, to succeed his own expired term, as members of the State Board of Health of Pennsylvania. Both these appointments are for the term of six years.

DR. SHAKESPEARE'S REPORT ON CHOLERA.

This report has grown to immense proportions and is not yet completed. It will be published, when finished, by the Government. To republish it in "The Annals" entire would seem like a waste of space after it has been already published, for now we are denied all access to it until its publication is completed, which is somewhat different from the understanding we had last fall. We would therefore ask those of our readers who want this report to make application to their Congressmen, who can secure it for them, and thus relieve our pages of an unnecessary burden. The report will probably not be ready for nearly a year. If this is not satisfactory we will refund the price of subscription to any one who so writes us.

LADIES AS SANITARIANS.

There is a deal of value in the suggestion of our correspondent on page 219. The ladies should be the sanitarians of the country; that is to say, while *everyone* should learn and heed the teachings of hygiene, there are many reasons why sanitary work can be best advanced by the ladies. In the very beginning, let us remember, that it is the woman who has it, to a very great extent, in her power, to mould the formation of the being yet unborn, so that he or she may be enabled to enter the race of life fairly equipped to make the struggle for existence that is the common lot of all mortals. Hence is it of the utmost importance that a woman should become a sanitarian, at least from the moment of conception, if not before. For a period, she is to be the home of a new life, of an almost divine creature, made in the image of his Creator, and every true woman must realize that this home should be made as it ought to be.

When, after birth, the little frail creature requires the tenderest of most intelligent care, from whom is it expected? Certainly not from the father, whose mind (as our correspondent so truly says) is full of business affairs, but from the fond mother, whose main thought is for the physical and moral advancement of her beloved offspring. The husband supplies the means, but the wife supplies the judgment whereby these means are rendered most effectual in the realization of the purposes and intentions of domesticity.

Who, like an intelligent woman, can look after the sanitary condition of the home? The husband, at his office from early morn till evening, can have no opportunity to observe whether bad odors indicate defective plumbing; what does he know of the habits of life of his children; what does he know of the

condition of his cellar, or the ventilation of his house, or of the quality of the food prepared for his table. What does he know of the condition of his children's bowels, how much exercise they get, the quality of the air they breathe, the character of baby's milk; the weight and quality of his clothing; whether the garbage is regularly removed and the thousand and one details, so essential to the healthy life of the individual? Very truly says a writer in *Public Health in Minnesota*:

"Home, the unit of social and political organization and government, is even more, the unit of successful and permanent sanitary organization and work. Our communities are happy, healthful and successful, just in proportion as the homes, which constitute them, are so. Nor is there any dispute that to the mother of the family is the success, or the failure of any home, in these directions largely due. She has the authority, and the strongest inducements to effort, as by natural selection, or rather by divine appointment, the health officer of her household.

Nearly one half of our total mortality is of children under six years of age. Their home is their world. The causes of their sicknesses and deaths find them *there*. They get access to their bodies in the air they breathe; in the water or other fluids they drink, and in the food they eat, *there*. The secondary causes of disease, in insufficient or impure supplies of these necessities; in insufficient or improper food; in neglected or wrong physical, moral or mental training; all these and more are in perpetual operation in and about the home.

The local origin of infectious disease to be, or not to be, epidemic in any community is in some one of its homes. The frequency of this cause; its character and probable malignancy, almost wholly depend upon the efficiency of the sanitary work of the mother of the infected household. Let her maintain the purity of the home air, water and food supply, the sufficiency of the clothing, exercise and work of her children. Let her look out for their vaccination in infancy, and its repetition in danger and after puberty.

Let her protect them from the infection of other disease by isolation, and by co-operating with the local health officer. Let her demand the co-operation, intelligent and efficient, of her family physician, and just in proportion to the number of such mothers will be the safety from infectious diseases, the health and longevity of the communities in which they live."

In some sections of our country the ladies are taking an active interest in sanitary work, and as a remarkable instance of the success which usually follows the earnest efforts of women, we note with the greatest pleasure and satisfaction that "THE LADIES' HEALTH PROTECTIVE ASSOCIATION OF THE CITY OF NEW YORK," starting two years ago with eighteen members, has now over six hundred names on its rolls. This becomes the more remarkable when we remember that "The American Public Health Association," after ten years of existence has only about eight hundred members; the one a local, the other a national organization. Every woman should be the health officer of her home, and we are sure, when we think of this wonderful and glorious association in New York, that it will be only necessary to call the attention of the ladies to the beneficence of hygiene to have them become most active and cordial co-workers with us in our cause of sanitary education and healthy living.

We would jump with joy were such an earnest and intelligent association as that in New York to become a reality in every city and town of this great country. Let us hope that it will.

THE TEMPERANCE LAW IN NEW YORK.

The Saloon Keepers of New York city are rigidly observing the law against the sale of liquor on Sunday with the idea of making it so obnoxious to the people that its repeal will result.

Notes and Comments.

ADVICE TO MOTHERS.

MARION HARLAND'S TIMELY SUGGESTIONS
ON THE SUMMER CARE OF CHILDREN.

The following is from the *Louisville Courier-Journal*:

"At this season, if ever, the mother must resist the disposition to fatalism. Recognizing, like a brave, sensible woman, that summer is fraught with peculiar perils, let her acquaint herself with the nature of them and station her guards. To begin with the most obvious of these dangers: Look wisely and seasonably to baby's clothing. Make changes—notably in flannels—cautiously. A woolen garment, covering the chest and abdomen, should be worn next the skin all summer long, at least until the child has completed his second year. It need not be heavy or thick. Exchange that worn in winter for one of moderate weight, and, as the heat increases, this for one still thinner. It must be of wool and long enough to protect the vulnerable parts indicated by day and by night. The day flannel must not be worn at night, nor *vice versa*. Linen is cooler, the perspiration evaporating from it with dangerous rapidity. The wearer runs about until weary, sits down to rest or falls asleep in a draught and in five minutes perspiration is checked. Baby is comfortable, and the skin is congesting. Flannel parts slowly with animal heat and moisture; the friction of it on the cuticle as the child moves about keeps the pores open.

SECOND. Do not let the little one get excessively overheated—or, should this occur, manage in person the process of cooling off. The nurse moved to compassion by the steaming scarlet face, will strip away the infant's outer clothing,

give him ice water to drink and set him by an open window. If left to his own devices baby stretches himself luxuriously on the grass or sand and pulls off shoes and stockings. If practicable, he perfects his work by wading in a puddle or dipping his head in a water pail. Many a guiltless suicide has thus gone the way of all the earth.

THIRD. Temper night air with discretion. The nursery should be ventilated, but baby must not sleep in the draught. Screen his crib from wandering airs in the hottest weather. The change that creeps over the darkened half of the globe between midnight and dawn is the terror that walketh by night. Train yourself to awake between 2 and 3 o' clock A. M. and testing the temperature of the chamber with a thermometer, adjust the covering over the plump limbs; see that the gown is closed at the throat, the flannel shirt or band drawn down over the bowels. These are simple precautions, but indifference to lesser perils than those which they may avert has filled many a home with mourning.

FOURTH. And outranking everything else, do not change the child's food so long as his present dietary agrees with and nourishes him. One of Mr. Lincoln's homely saws, advising against a horse trade while crossing a creek, is sharply pertinent here. Green fruit has slain its thousands, but the Herodian murderer of babes from two years old and under is the mother's vicarious hankering after variety in the nursery bill of fare. When you wean your child seek out one really excellent kind of food, and, having established the fact that it suits him better than any other, cleave unto it while he relishes and thrives upon it, remaining proof against temptations to depart from it until the ugly creek of the second summer has been forded.

The milk that enters into the composition of porridge, or whatever may make up his modest menu, must be sweet and fresh; the cereal with which it is combined the best of its kind and the mixture never be oversweetened. Eschew experiments as you would labeled poison. Do not let him drink iced milk or ice water and avoid the other extreme. Cold checks digestion and really hot drinks have a tendency to weaken the bowels. Keep wholesome respect for the "intestinal changes" before your eyes and do not interfere with them. Finally should baby languish in spite of wise regimen, give him immediate change of air."

REGULATING HOUSE DRAINAGE.

JUDGE ARNOLD SUSTAINS THE MASTER PLUMBERS' ACT, AND DECLARES THAT IT IS CONSTITUTIONAL.

In the October term of the Quarter Sessions Frederick and Louis Lambrecht were indicted for violation of the Act of Assembly relating to the regulation of house drainage, etc., by the Board of Health. To this charge a demurrer was entered, and Furman Sheppard, Esq., recently argued before Judge Arnold that the Act was unconstitutional, because it delegated the law-making powers to a department of the municipality, and he also demurred to the form of the indictment.

Judge Arnold, in the old Court House, recently delivered a decision upon the question, the material part of which is as follows: "After a careful consideration of the matter, I am unable to find any conflict between the Constitution and the Act of June 30, 1885, authorizing the Board of Health in cities of the first class to regulate house drainage, the registration of master plumbers and the construction of cesspools. The argument of the learned counsel of the defendants that

the Act delegates the law making power to a department of the municipality is not well founded. By a public statute it is enacted that, the Boards of Health in cities of the first class are authorized and directed to adopt and promulgate suitable rules and regulations for the construction of house drainage and cesspools, and to provide for the registration of master plumbers and persons engaged in the plumbing business in said cities.' The said 'Boards shall also establish a system of inspection and supervision over all house drainage and cesspools, and ventilation of the same.' Fine or imprisonment, or both, at the discretion of the Court, may be imposed upon any person who shall refuse or neglect to comply with the requirements of said rules and regulations when promulgated. Thus it will be seen that the offense and the punishment are prescribed by the statute. The Boards of Health can do no more than to adopt and promulgate the rules and regulations, and, by inspection and supervision, see that the requirements thereof are complied with. It is always to be kept in mind that the rules and regulations of the Board must be reasonable, and that the power to determine whether they are reasonable or not is vested in the courts which try the persons charged with non-compliance with such rules and regulations. Statutes providing for the registration and regulation of persons engaged in a business which affects the general public may be found in all civilized countries. It is an inevitable consequence of advanced civilization that the natural rights of the people may be regulated and to some extent abridged. So long as such rights are not totally denied, the regulation of them has been held to be lawful and generally acquiesced in by the people. Passing to the objections to the form of the indictment, I am of the opinion that some of them

ought to be sustained. The first count, which charges that the defendants, not being registered plumbers, did carry on and engage in the plumbing business, is defective in not charging that they were master plumbers. The Act requires that master plumbers only shall be registered. There is no prohibition in the Act against a man doing his own plumbing, but if he does he must do it according to the rules and regulations, inspection and provision of the Board of Health. The power to regulate does not include the power to prohibit." The Judge then holds that for this and other formal reasons the indictment is defective and sustains the demurrers with reference thereto, granting leave to the District Attorney to amend the bill in those particulars.

THE HEALTH OF ROME.

The *Medical Register* says there is a prevalent notion that the visitor to the Italian cities incurs a great risk as regards malarial and other diseases, and that whoever escapes sickness during his brief sojourn in these localities may be considered particularly fortunate. In contrast to the above may be noted an article contributed to a London journal by Dr. Drummond, a resident English physician, who bases his conclusions upon personal observations extending over a period of six years, and the study of the public records of deaths occurring during the last ten years. He writes:

"The total number of deaths was 160 (average, 16 per annum), and of these 28 were due to typhoid fever (average, 2.8 per annum: 3.2 for the first quinquennium and 2.4 for the second). During the last twelve months there was not a single death from typhoid or from fever of any kind, except that of a child, aged 4, certified by an Italian doctor to have

died of perniciousa on July 31st, 1886, outside the Popolo Gate. The other three cases of malarious fever in the ten years were American. From diphtheria we have three deaths out of the 160; whooping-cough, dysentery, puerperal fever, each 1; septicæmia, 2. Twenty-nine died at the age of 65 and upward, and 21 at 70 and upward, the average age of the former group being 74.68, and of the latter 78. Eight were upward of 80 years, and 1 was 97. The great majority were due to chronic organic diseases of the heart, liver, lungs, kidney, etc.

"The British Consul estimates the number of English visitors each season at 10,000, and the number of Americans can hardly be less."

During the last five years, 5 of the 12 fatal cases of typhoid and 2 of the 3 fatal cases of malarial fever in the city occurred in private apartments, showing that hotel life is the less dangerous of the two. While many years ago there was reason for the belief that Rome was a somewhat unhealthy city, this fact does not, we believe, hold good at the present time. The city has been favored for hundreds of years with a pure and unfailing water supply, and this has undoubtedly kept down its death rate. Much of the sickness occurring in the city in past years has been the result of imperfect sanitary precautions, which at the present time are much more complete and effective. Much of the sickness incurred by the visitor is no doubt the result of his own carelessness, such as exposure to night air and great variations of temperature, unsuitable food, and the disregard of the common laws of health.

FASHION.

The *Kansas City Medical Index* says: What has the physician—what has the

sanitarian to do with fashion? Much—very much. It is only through the physician that the masses can be taught the evils of dress and be lead to abandon pernicious habits. Too little has been done—doctors fear to offend their lady patients or, still worse, do not *care* to take an interest in the matter. Approach one upon the subject and he will say: "Oh yes I know, but I cannot do anything alone!" Ah, yes you can, doctor—you and your brothers can do it all if you only *will*!

You know that fashion is a cruel tyrant—tell your patients so and interest them in the ways of health. Women who go about the streets with the cold blasts blowing upon their unprotected legs, who go into the snow with thin shoes and thinner stockings, who go out into the cold wind with heads and foreheads practically bare, women who habitually squeeze their chests and abdomens into half their natural circumference—all these come under your observation and are more or less subject to your will. Can you sleep with an easy conscience if you fail to perform your duty towards them and their offspring? Or the half grown girl wearing high-heeled shoes, with her spine and pelvis, pliant bones, distorted into all abnormal shapes by following the dictates "of fashion"—can you do nothing to stop it? Try.

Tell these delicate creatures that beauty never comes from these false notions of dress—show them that beauty is in health, strength and a well developed body. Instruct them in the ways of health—that these fashions destroy health and happiness by disturbing the functions of menstruation and that such exposures interfere with maternity; and above all teach them that in the eyes of all sensible men the perfect picture of true beauty is the *perfect picture of health* and that they must, to attain physical (as well as mental)

loveliness, imitate nature as the only pattern of true physical beauty.

Perhaps you cannot do all of this, but you can do much, and it should be remembered that the duty of the true physician is not so much to alleviate pain and misery when met as to prevent their occurrence—the highest type of physician is he who is the best sanitarian.

DINING ON SNAILS.

Jay Gould has started the fashion in New York. Nearly every afternoon since his return from his far Western trip, the great little financier has stopped at the office of a transatlantic steamer company, stayed a few seconds in the agent's sanctum and emerged with a brown papered parcel, which he carried home with the air of possessing something very precious. These packages contained each about a quart of snails, of the species eaten in some parts of France, and especially imported by some of the steamship men as a favor to friends. Mr. Gould got his appetite for snails in New Mexico, however, and "got it bad," as one close observer declares. He has the things cooked under stringent orders to boil them first in their shells, then submerge them in a highly flavored sauce, and finally roast them. They are served in the shells, which by this time are thoroughly browned. When eaten they are piled hot on a plate, after the manner of roasted clams, and the eater extracts them by holding a shell in his left hand, while with a fork in his right he gets the curious morsel out. The taste is pleasant, if one isn't squeamish, and a liking is easily acquired for the "escargots," as they are called in the restaurants, where they have been recently suddenly introduced. Some are brought from France, but the bulk are gathered by boys in the outlying districts. Mr. Gould has hitherto been

famous for a plain diet, and so his mania for snails is all the more a Wall street wonder.

SALICYLIC ACID USED FOR ADULTERATION.

A commission appointed by the French Academy of Medicine to inquire into the employment of salicylic acid as an antiputrefactive agent in the manufacture of beers and wines has recently issued its report. Though this addition to beers and other eatables to ensure their keeping has not at present been the subject of legal proceedings in England, yet, as the report remarks, there is no evidence to show whether this is due to the tacit tolerance of the analysts or the fact that the acid is not used in English beers, which are more capable of preservation owing to their greater alcoholic strength. The inquiry divides itself into two parts. First, has salicylic acid, in moderate doses, continued for a long time, any deleterious effect on the body? Secondly, is there a point in the percentage of the acid in beers and wines beyond which it is unsafe to go, and below which there is no danger to the consumer? The first question is answered in the negative. Despite the fact that Colbe took for thirteen months one drachm every day in beer or wine, and that Lehmann gave fifty centigrammes a day to two individuals in sound health, without effect, there is reason to believe that the acid would be injurious to those predisposed to its action, and in persons not in sound health, especially those suffering from renal disease, in whom, as has been known for some time, owing to defective elimination, the drug quickly produces toxic symptoms. The answer to the second question is also unfavorable to the supporters of salicylage. Owing to the difficulty of ensuring an exact percentage and the ease with which a maximal

dose can be passed without detection, it is unadvisable to sanction by law any addition of this nature. Moreover, as has been well said, "let each put salicylic acid in his beer if he likes, but not in that of others without their knowledge."

THE DIETARY IN CATARRH OF THE STOMACH.

The Cincinnati *Medical News* gives the following list of dietetics in catarrh of the stomach:

1. Milk, cold or warm; bouillon; beef tea prepared cold. To one pound of beef cut up in pieces the size of dice, add one pint of distilled water and ten drops of dilute muriatic acid. Let stand in refrigerator twenty-four hours, strain, and season to taste, and, if desired, warm, but not enough to make cloudy.

Peptonized milk; zwieback not sweetened, crackers, rusk, toast; natural seltzer and Vichy waters, carbonated distilled water.

2. Soft boiled or raw eggs; rice or sago boiled soft in milk; clear soups; purée of potato; vermicelli or "noodle" soups; raw oysters.

Boiled, roasted, stewed or broiled calves' brains, sweet-breads, pigeons, chickens, calves' feet (?).

No vegetables, except those mentioned, to be allowed with soups.

No "wheaten grits," hominy, barley, oatmeal.

3. "Minced" or finely cut boiled ham, and rare beefsteak.

Coffee and tea. Articles under 1 and 2 as advised.

4. Rare roasted beef and veal, especially cold; roasted chicken and pigeons, without sauces, especially cold; venison, partridges, woodcock, and snipe, not too fresh; boiled fish; white bread (stale); macaroni; baked apples; fruit jellies; a very small amount of butter, otherwise no fats at any time; only dry wine; no

beer; no ale or porter. Rye whisky or brandy diluted with the waters mentioned may be used with lunch and dinner when pronounced necessary.

POISONED AIR.

THE ATMOSPHERE OF THE JUDGES' RETIRING-ROOM.

Judge Gordon, thinking that the recent sudden illness of Judge Finletter might have been caused by a defect in the drainage and the concurrent poisoning of the air, wrote to Dr. Benjamin Lee, the Secretary of the State Board of Health, asking him to make an examination of the plumbing in the Judges' retiring-room of Court No. 3. Dr. Lee's reply runs as follows:

The Hon. James Gay Gordon—Dear Judge: There are two ways in which the air of the apartment which I examined this morning is liable to become vitiated. The first is by saturation of the water in the trap under the water-closet, and the second by syphonage of the trap under the urinal. The water-closet trap is at the head of the soil-pipe and sustains a very considerable pressure. Under this pressure saturation of the water rapidly occurs, and as soon as it has taken place the water soaks up the gas like a sponge and transmits it to the atmosphere above. The escape from the urinal trap is below the water-closet trap into the soil pipe. A sudden rush of water down the latter might suck out the small amount of water in the former and thus establish a free communication between the air of the room and the sewer. There is some probability, too, that a small trap like that might be blown through by a strong east wind blowing up the sewer at low tide, or by a very high tide damming back the gas. The remedy for all of these possible evils would be to carry the soil-pipe up through the roof, and thus establish a free ventilation which would take off the pressure on the seals. In my opinion this is necessary in order to render the room free from danger to those occupying it even temporarily. I have

the honor to be, dear sir, yours very respectfully,

BENJAMIN LEE, Secretary.

DEPOPULATION OF FRANCE.

M. Rochard, Member of the Academy of Medicine, in a lecture given at the Sorbonne on the depopulation of France, showed, by the returns of the last census in the provinces, that the districts where the rates of increase were greatest were in general the poorest, and that rich provinces like Normandy were fast sinking. This falling off of the population, added to increasing foreign immigration, was a serious matter for France; yet the annual death-rate was steadily decreasing, and had fallen from 27.5 per mille at the beginning of the century to 22 per mille. In reference to the question of child-mortality, the lecturer explained that it was chiefly attributable to neglect and insufficient food. He believed that, contrary to the opinion held by Darwinians, it was not the worst constituted children that died, but rather those who were improperly fed, as no constitution could stand insufficient diet. He believed that a stringent system of inspection would do much towards diminishing the death-rate among infants. If the very moderate statement that infantile mortality could be reduced by about 20 per cent. were accepted, the annual increase in the population would then rise from the present figure, which was 2.5 per mille, to 5 per mille. At the present rate, England will, in five or six years, notwithstanding immigration, have as large a population as France.

UPS AND DOWNS IN WALL STREET.

A writer in *The New York Ledger* says: "An old gentleman whom the writer met yesterday in four years paid one firm in

Wall Street the sum of \$250,000 in commissions. He was a wealthy man when he went into the street with a laudable but unwarrantable desire to increase his patrimony by speculating in stocks. Now, so heavy have been his losses, that he would be satisfied if he possessed the sum he has paid out in commissions. As it is, he will cheerfully accept a clerkship in the same firm. If he had been contented with a handsome sufficiency for the day, amounting really to a superabundance, he would now be in affluence instead of comparative destitution. On the other hand, a young clerk, who, a few years ago, commenced to speculate in the street with \$200, the savings of a year's abstinence from smoking, is worth in real estate over \$1,000,000 and several more in securities. In Wall Street speculation what is game for one man is ruin for another."

We will wager that the man who lost his money has also lost his health; and that he who made will, in turn, become a financial and physical bankrupt. If you desire good health and long life, avoid Wall Street; they are not to be found there.

CREMATION OF THE INDIAN DEAD.

The *Yuma* (Cal.) *Sentinel* says that lately an attack of measles has been playing sad havoc among the Yumas across the Colorado River, and nightly the red glare of the funeral pyre lights up the horizon all around the mountainous chain encircling their reservation. The scent of burning flesh can be sensibly perceived in the atmosphere by any one in the city who has his olfactories exposed at the time. But with the dead dies every living thing belonging to the deceased. All other property likewise perishes. This obliteration of all earthly possessions, of course, makes the Yumas the poorest

Indian race in America, and always will, unless they are in some way restrained in the exercise of their foolish custom. The belief is that this immolation will appease the owls—the spirits of their dead—who will visit them forever in mournful hootings unless the holocaust is made in all its hideous forms, without shade or variation from that known to their fathers. How long the fires will burn depends on the victims the dread reaper sends in, but let us hope they will soon learn to discard their medicine men and leave the white people an opportunity to save their lives in case of epidemics.

AN ORPHAN BORN.

Burdette thus writes in the *Brooklyn Eagle* :

I am a lone, unfathered chick,
Of artificial hatching;
A pilgrim in a desert wild,
By happier mothered chicks reviled,
From all relationships exiled,
To do my own lone hatching.

Fair Science smiled upon my birth
One raw and gusty morning;
And now the sounds of barnyard mirth
To lonely me have little worth;
I am alone in all the earth—
An orphan without borning.

Seek I my mother? I would find
A heartless personator;
A thing brass hided, man-designed,
With steampipe arteries intermined.
And pulseless cotton batting lined—
A patent incubator.

It wearies me to think, you see—
Death would be better, rather—
Should children e'er be born to me,
By fate's most pitiless decree
My little ones, alas, would be
With never a grandfather.

And when to earth I bid adieu
To seek a greater,
I will not do as others do,
Who go to join the ancestral crew,
For I will just be gathered to
My incubator.

FEIGNING SMALL-POX.

In relating his experiences as a Southern scout, during the war, in the *Phila. Times*, Captain Thomas N. Conrad says:

"Learning that the small-pox was raging among our prisoners, and that each morning the surgeon sent outside of the picket line all suspected cases, I determined to feign small-pox and escape. I remained upon my blanket, rolling, tossing, complaining fearfully of my back and head until the surgeon reached me. He carefully examined me, asked me many questions, and concluded that I would have small-pox, in confluent form, in less than twenty-four hours. I was carried in a stretcher to the ambulance and put in by the side of two men, both of whom had the small-pox. I rode with them to the small-pox camp, was taken out with them and placed in a tent. Late that night, no guard being required for a small-pox camp, I jumped up, slipped out of the tent and made tracks toward my "Doctors' line." I reached it, after walking two entire nights, signaled my boat, and on the third night the 'rebel scout' was again at 'Eagle Nest.'"

THE HYGIENE OF THE WORKING CLASSES.

It makes one's blood boil with indignation, when he reflects that the desire for *cheapness* on the part of those to whom it is not a necessity, practically forbids too many of the working class the blessings of a life conducive to health and happiness. How can a woman have any pleasure in life or surround herself with any of the essentials of health, when she is paid eighty cents for making a dozen shirts, and it takes a week to make three dozen, for which she receives \$2.40; out of which must be deducted 50 cents for cotton, leaving \$1.90 on which this particular woman, of whom we write,

must support herself and baby for one whole week. And to make this much, she is obliged to work so hard and so long that her health breaks down and she is forced to the poor-house. It is a fact that the physical power of Great Britain is being slowly and surely sapped by this desire for cheapness, because by ruining the health (from overwork and insufficient food and improper conditions) of those who contribute to its population, future generations are physically degenerate, and in time the country will surely lose its physical prestige. The same danger is to be feared in this country. Let us remember that every woman whose health is broken is a likely source of origin of some degenerate creature, who will in turn propagate like unto himself and that this broken health means an irreparable loss to the welfare of the nation.

THE MORAL HYGIENE OF SHOP GIRLS.

It is a fact that in the majority of our stores, even of the better class, the two prime requisites for the employment of sales-girls are that they shall be good-looking and well-dressed. These points are insisted upon by the proprietors, yet the wages offered are inadequate to support the girl and allow her to dress as required. Though we hesitate, yet duty compels us to record that when a fresh, pure, innocent young country girl recently applied to the male proprietor of a prominent store in this city for employment, and remarked that it was impossible for her to support herself on the wages offered, she was answered: "That is no business of mine," and was met by a suggestion for the increase of her income which decency forbids us to print. The disgusting nastiness of this reply is nauseating, but it is true. Here again, the desire for cheapness indirectly works the moral ruin every year of hundreds of girls. As with the

sewing woman, her physical, so with the pretty store girl, her moral ruin is brought about by the inexcusable desire for cheapness on the part of those to whom it is not a necessity.

AN ATTRACTIVE GHOST.

In the early morning hours, recently, a Boston policeman was startled by the sudden appearance of an apparition in white gliding out of Lynde street into Cambridge street. He started after the ghost, which began to run at great speed, its hair streaming out behind. By a hard spurt he overtook and seized it. The ghost materialized into a good-looking young woman, in bare feet and an embroidered night dress; but the maiden said nothing, and thinking she was insane he took her to the station house, where she still maintained silence. It was evidently a case of somnambulism. The Lieutenant laid his hand upon the young woman's shoulder to see if it would rouse her, when she suddenly threw her arms about his neck and laid her head upon his manly breast. She was still unconscious, and the embarrassed Lieutenant had great difficulty in escaping from her embrace. A physician was sent for, and after about fifteen minutes she roused and was terribly shocked by the situation in which she found herself. She was wrapped in a quilt and taken to her home.

POISONED BY CHEESE.

Recently several persons were poisoned in New Jersey by eating cheese. It would seem that many of the cases of ice cream, cheese, and milk poisoning and the like (all cases wherein milk plays a part), which were formerly mysterious and inexplicable, have now owing to the inestimably valuable labors of Professor Victor C. Vaughn, of Michigan, been reduced to an understandable basis. We

know that if milk is agitated, as by transportation, or otherwise, before the animal heat has evaporated from it there is great danger that in such milk there will develop a poisonous substance to which has been given the name of tyrotoxicon. This is an established fact, and our duty is clear. Every farmer in the land should be made acquainted with this fact, and if any one thereafter offers for sale milk that has not been thoroughly cooled, he should be held guilty of a misdemeanor; and if fatal results ensue from his carelessness, he should be convicted of manslaughter at least. The remedy or prevention for illness and death from this cause is plain and definite, and we should see to it that our lives are not longer jeopardized by ignorance or carelessness.

THE AMERICAN WORKMAN'S DINNER.

The *American Grocer* says of "Dinner pails. Recently these afforded an interesting economical study. There were more than a score of them in the hands of laborers seated on the sidewalks with their backs against the brick wall which protects Trinity Churchyard on New Church street. We could not help seeing their contents as we passed. Every man had light, spongy, well-baked wheat bread. Many of them had with it boiled eggs or liberal slices of meat. In most every pail was some luxury, either pie or huge chunks of cake, and not of the plainest sort, but rich layer cake. They also had a liberal supply of either tea or coffee. And was it not significant that not one of the wage earners was found drinking beer? Nowhere else in the wide, wide world will the dinner pails of the workers tempt the appetite as here in the United States. No millionaire in this big city eats better food of the same sort than we saw taken from the workmen's pails."

SANITATION IN CALIFORNIA.

There are not many sections of our country where the interest in sanitation exceeds that of this far western state. We take it that the people of California must not only be a very progressive set, but that they are also unusually well endowed with that most rare of all accomplishments, *common sense*. They believe *practically* in *prevention*, and under the wise guidance of their very efficient State Board of Health, they are rapidly putting into practice the teachings of hygiene. In a short time San Diego will have a most complete sewerage system; Los Angeles has invited Colonel Waring to make suggestions; while Sacramento, Oakland and San Francisco will soon follow suit. The signs of the times are glorious. A few years ago sanitarians were regarded as visionary dreamers and cranks; but, thank God, this barbaric period of darkness has gone by, and the glorious era of hygiene has surely dawned for evermore.

POISONED BY COLORED CANDY.

The poisoning of several children recently in Newark from eating colored candy has been particularly impressed upon us, because we recently had a similar experience in this line. As the result of actual experience, we feel warranted in saying that it is a very unwise and unsafe thing to give your children any kind of artificially colored candy. We have cream, mint, chocolate, molasses, and a variety of such candies, which will give just as much satisfaction to the child and in which no danger lurks, if used in moderation, save that which might come from *too much* sugar.

MR. PARNELL'S ILLNESS.

It would seem that the Irish patriot is another striking illustration of the fact

that a man must gauge his work by his strength. If we are to credit the rumors we hear, Mr. Parnell is far from being a well man. We believe that his physique was not originally of the most robust type, and therefore the amount of work and anxiety that would be but occupation to the iron frame of Gladstone, has been too much for the less vigorous but equally ambitious Irishman.

AN IDEAL SUMMER.

To those to whom expense is no consideration, we would suggest that they spend June in the country, July and August at the sea shore, September in the mountains and October and November back again in the country; coming to the city home about the first of December bronzed, healthy and contented. Variety is truly the spice of life, and it is clearly better, when feasible, that these changes should be made than that we should pass the whole summer in the one locality.

THE POPULAR GIRL OF THE DAY.

The popular girl of the day, says an Irish paper, is straight and strong and dashing. "The clinging girl with tender eyes, the romantic girl with yearning glare, the domestic girl with purring voice, the "brilliant" girl with her turgid French, the sniggling girl with her artful smirk, and the girl who clings to mamma's skirts—they are gone. They went away in a flutter, with timorous screams at the snort of the engine and the rush of the busy world. Now they've come back, but they're not the same. Instead, there's an army of lofty, gay, intrepid, meddlesome, dashing girls, who swagger abroad with delicious feminine audacity. Of all the types that the town has seen, the girl of to-day, with her high-bred look, her daring style and winsome assumption of manliness, is far away the most fetching thing that the world at large can show.

THE PRINCE OF WALES' BREAKFAST.

A writer in *The Press* tells us that the Prince of Wales appears in a loose velvet shooting-jacket and chamois slippers, and begins the day, as indeed he ends it, with a substantial meal. H. R. H. is not fond of what our English cousins call French kickshaws. He likes the solid toasted muffin, the pink and white slices of home cured ham, the generous section of Melton Mowbray pork pie, grilled chops flanked with kidneys, broiled on a silver fork; plenty of good thick cream and butter—but thereby hangs a tale which you shall have later. The Princess and her daughters are partial to oatmeal and milk, sweet omelettes and little birds, plovers' eggs served in a real nest, and bits of cold pheasant. Dry toast in silver racks is always on the breakfast table, in the centre of which never fails to appear a bowl of gay flowers, arranged by the Princess Victoria, with whom flowers are a passion.

A SUMMER BED ROOM.

SIMPLE, FRESH AND CHARMING INTERIOR DECORATION.

The *Art Age* says: An inexpensive and prettily-furnished summer bed room has the floor covered with cream white and green matting, which has a pattern of large white and green blocks alternating. This matting can be had for sixty cents a yard, is a yard in width and is of the seamless variety. A dado of the same matting, put on with small brass nails, surrounds the walls, which are tinted a pale green. The iron bedstead is painted white and covered with a spread of scrym muslin, lined with pale green cambric, painted green. The commonplace white marble mantel has been painted a green color, to match the doors, rather darker than the rest of the room, and is draped

with the scrym, lined with green, and caught up in the centre with green ribbons, making two graceful festoons. Some simple ornaments stand upon the mantel, over which hangs a pretty water color, framed in white and gold. In front of the fire-place stands a small screen of bamboo lattice work, lined with green. This room is charming from its simplicity, freshness and good taste.

THE MAN WHO COULD NOT DRINK WATER.

The *Nashville American* is responsible for the following:

"Now, gentlemen," said the boisterous man in the smoking car, "this thing of eating thirty birds in thirty days is easy enough to do, unless you are betting you can do it. The idea of having it to do makes it repulsive. Now, for instance, I will bet \$5 that there is not a man in this car that can take thirty drinks in thirty days."

"I will take the bet," said a tall, raw-bone party across the aisle.

"All right, sir. Where did you say you were from?"

"I am from the great commonwealth of Kentucky, sir."

"Good! put up your money."

"Here is the chink. Now what drink do you name?"

"Water," said the boisterous passenger, as he put up a V.

"Water! Water!!" screamed the gentleman from the dark and bloody ground.

"The money is yourn stranger. Do you 'spose I would drown myself for \$5?"

A SHIP CAPTAIN'S WIFE AND SEVERAL SAILORS VICTIMS OF CHOLERA IN BUENOS AYRES.

The British bark Macleod arrived at this port May 27th from Buenos Ayres,

via Barbadoes, where she took on board a cargo of sugar.

Chief Mate Gay reports that when they left Buenos Ayres the cholera was raging and the people were dying like sheep. While the Macleod was lying at that place the wife of the captain of the bark Golden Rule died of that disease, the chief mate and one man out of the bark Brannen and four men out of the bark Wylo. When the sailors on vessels at that place are taken with the disease they are removed from the vessels by the authorities to a hospital on shore. A large oven is built in the yard surrounding the hospital, and when they die the bodies are burned up.

Mate Gay, in speaking of the death of the Captain's wife, said the unfortunate woman died before she reached the hospital. The authorities allowed her body to be buried in the swamps outside the hospital grounds.

HOW THE HAREM WAS VACCI- NATED.

The women in the Sultan's seraglio at Constantinople have just been vaccinated to the number of 150. The operations took place in a large hall under the superintendence of four gigantic eunuchs. The Italian surgeon to whom the work was confided was stationed in front of a huge screen, and the women were concealed behind it. A hole had been made in the centre of the screen, just large enough to allow the arm to pass through, and in this manner arms of various colors and sizes were presented to the operator in rapid succession. It was utterly impossible for the surgeon to get even a glimpse of his patients; but in order to guard against the chance of his being able to see through the screen, two eunuchs, who stood by the operator, threw a shawl over his face instantly an operation was concluded, and did not remove it till the next arm had been placed in position.

WEBSTER SEES HIMSELF ON CANVAS.

A lady of one of the old families living near Boston related recently an incident of Daniel Webster, which has never been in print before. This lady happened to be one of a few friends who went with Mr. Webster to the hall where hung on exhibition, previous to its final location in Faneuil Hall, Mr. Healy's now famous painting representing Webster making his reply to Hayne. "Mr. Webster," said the lady, "was very feeble, and was led in by the artist. Ascending the platform which commanded a view of the picture, Webster looked at it for some minutes, making some pleasant observations to his friends respecting the different senators and the various points of interest on the canvas. This portrait and that were spoken of, and even the pages recognized. Finally, turning to go, Mr. Webster quietly remarked:

"And as for that man, standing there in the centre—well, I've seen better looking men in my day than he!"

THE AVERAGE COUNTRY PARLOR.

For some unaccountable reason the average farmer seems to have a most deep-seated dislike of sunlight in his house. Possibly because he has so much of it when working in the field, or for some other invalid reason. The shutters are usually closely barred, and the parlor may be truly described as grave-like, damp and mouldy, relieved now and then by the presence of dried weeds and grasses. This is all wrong. His corn will not properly grow in the field unless it receives the necessary influence of the sun, and no more will his wife and children successfully thrive in the house to which the rays of God's sun are denied admittance. It is a fact that the farmer is surrounded with all the

necessary elements of good health, yet it is equally true that there are few persons who lead such insanitary lives. We will shortly publish an interesting article on this subject.

A PARISIAN INDUSTRY.

One of the most curious of these is a "dive" known by the name of "Le Marche de la Regie," where all those individuals who pass their days wandering about the streets picking up cigar stumps and cigarette ends congregate every night. They form a sort of corporation, working under a single chief, who each night assigns to them a particular district of Paris for the next day. These cigar stumps are termed "megos," and the best ones, after being sorted, are sold at four and five cents a package. The remainder are sold at two cents a handful. The purchasers of this class of merchandise are mostly old men and workmen who can not afford to buy good tobacco in any other form. The pickers in the streets manage to earn an average of forty cents (two francs) per diem, and have the privilege of smoking and chewing as much as they please.

THE CITY NOT RESPONSIBLE.

Joseph E. Carr sued the City of Philadelphia recently, to recover damages for the death of his child and the sickness with diphtheria of his wife and three children in the Spring of 1885. The disease, it is alleged, was caused by the refuse and offal from a slaughter-house a square above his house. It is contended that on account of the inequalities of the street and the lowness of the gutter unhealthy substances accumulated before the plaintiff's house. The Judge directed a verdict for the defendant on the ground that the City could not be charged with negligence in its failure to provide sewers.

This may be, and no doubt is law, but it is bad law. The City owes it to the taxpayers to provide everything conducive to public health and it should be held responsible when it fails in its duty.

THE SKULLS OF THE HOHENZOLLERN FAMILY.

By order of the German Crown Prince, Professor Virchow has recently made a physiognomic examination of the skulls of those members of the Hohenzollern family whose remains are deposited in the vaults of the Berlin dome, for the purpose of discovering certain characteristic traits, such as are known to exist in the Hapsburg and Bourbon families. The result of these studies is, of course, not to be made public. Certain connoisseurs declare that such a family trait is not discernible in the Hohenzollerns, although certain physiognomies repeat themselves frequently, some representing the late King Frederick William IV, the others the present Emperor William. There is, for instance, a great resemblance between Frederick William IV and the Elector Johann Cicero, as may be seen by the bronze statue of the latter in the Dome, the work of the famous Peter Vischer.

THE WATER SUPPLY OF EUROPEAN CAPITALS.

The water supply of the various European capitals affords some interesting facts, not the least noticeable of which is that Rome heads the list with her 204,000 litres of pure water—a litre being a little more than one and three-fourths pints—every twenty-four hours, and as her population is 345,036, every inhabitant can thus dispose of nearly 600 litres per day. London comes next, for every one of whose population of rising 4,000,000 there are 300 litres daily. Paris takes

the third place, her population amounting to 2,240,124, and each inhabitant having for alimentary purposes 58 litres per day and for secondary uses 169, or a total of 227. Berlin has 1,302,283 inhabitants, for each of whom there are 140 litres daily; Vienna, 770,172 inhabitants, with 100 litres each per day; Naples, 463,172, with 200 litres; and Turin, 278,598, with 90 litres a head every twenty-four hours.

THE LADIES HEALTH PROTECTIVE ASSOCIATION OF NEW YORK.

We have received a report of this association and as we read, we are lost in admiration of the energy, pluck, and perseverance of these determined ladies. They started out to abolish certain nuisances prejudicial to health and they did not content themselves with talk. They worked and they conquered. It is wonderful what work they have accomplished in the two short years of their existence. Their influence has been felt in the legislature of their state and having now done so much, they are encouraged to grapple with still greater problems. We have genuine admiration for this noble band of ladies and we wish them, (as we know they will have) the very highest measure of success in their glorious work.

WAS IT TIGHT LACING?

A fair young mother, just before going to a ball, entered the nursery with her husband to bid her little daughter good-night; the child looked at her in astonishment, and a moment after the tears came into her big blue eyes, and she sobbed out:

“Poo’ mamma! Poo’ Nellie’s mamma!”

"Why, what's the matter, Nellie?" asked her father.

But the child went on sobbing and caressing her mother's cheek till the latter trembled for her make-up.

"What's the matter with your mamma?" asked her father.

"Poo' mamma's all squeezed up froo'e top of her dress!"

THE CENTRE OF THE UNION.

It hardly seems credible at first thought, but the village of Atton, Alaska, makes San Francisco practically the half-way town as we go from Calais, Maine, to our westernmost settlement. It is really but slightly short of being just midway, since Atto stands almost three thousand miles west of the Golden Gate.

The distance in statute miles between San Francisco and a point due south of Atto, measured on the parallel of San Francisco, is 2,943.1 miles.

The distance east from Atto of a point due north of San Francisco measured on the parallel of Atto, is 2,214.5 miles. A strict geographical centre of the American Union is that point at sea forty miles off the mouth of the Columbia river, on the coast of Oregon.

JOHN BARLEYCORN MAKES ANOTHER FOOL.

The West Chester *Local News* says that recently some of the citizens residing between Toughkenamon and Kennett Square were surprised to see lying by the roadside a large number of fine shad, a big lot of herring and other fish, supposed to be at least five hundred in all. On examination they were found to be perfectly fresh and how they came there was a mystery they were not able to solve. It was afterward ascertained that they had been brought from the Susquehanna by a huckster, who had gotten on a bit of a

spree and finding the fish interfered with his determination to continue it he had deliberately dumped them out into the road and had gone off to finish his debauch.

AN IMPOSTOR MESSIAH.

The *Pull Mall Gazette* says that a wealthy peasant of the village of Obodny, Russia, was recently visited by three venerable-looking men, dressed in garments of a somewhat clerical fashion, who informed him that they were Christ and the Apostles Peter and Paul. The sham Christ said to him: "I have given you great wealth, but you have omitted to exercise charity, so I have come to reckon with you. Give me your money." The terrified peasant fell on his knees, begged for mercy and gave over 500 silver roubles, declaring it was all the money he had in the house. They were not satisfied, and he sent off his servant to collect money from neighbors who were indebted to him. Finally some of the neighbors found out that the men were impostors, and they were driven away.

SEA-WATER SOAKED COFFEE.

Some two years ago a vessel was wrecked on the Jersey coast, near Cape May. Part of her cargo was coffee, which was regarded as utterly worthless from having been in contact with the pelts of the cargo and then soaked two or three days in the sea. Some who tried to use it were made sick, and abandoned the idea of gathering more. An enterprising farmer of Cold Spring has bought up the water-soaked berries to the amount of several tons, shipping them to Philadelphia a few days ago, so that the people of this city may have a chance of sampling Jersey coffee.

If sanitary education were general, we would not have this fact to chronicle.

THE DUDE WITH A BIRD IN HIS HAT.

The *Atlanta Constitution* tells us that there are young men who wear corsets. It is generally known that for some time individuals of that mental calibre have existed in limited numbers. It remained, however, for the present style of big-legged breeches to bring us still another caper for the "daft" young men. The boys have taken to wearing hoopskirts. It takes a hoopskirt for each leg, and the hoop fastens at the hips. They are used to keep the big-legged breeches in shape. Bustles will probably come next, and then we may expect to see the too utterly too-too young men with birds on their hats.

These creatures may look pretty, but God help their offspring.

DR. MCGLYNN AS A SANITARIAN.

Whatever may be the thought of the Rev. Dr. McGlynn's religious and socialistic doctrines, there can be no question that he holds some sound hygienic ideas, for in a recent lecture in New York on "The Sanctity of Labor," the reverend gentleman very truly said "Labor was a necessary law of health, mental, physical, and moral. It was not labor that we should quarrel with, then, but excessive labor—the unnecessary, paralyzing protraction of the hours of labor." In this dogma, we will all agree with him, though we may differ in our ideas of what constitutes "paralyzing protraction."

EMBARRASSING, TO SAY THE LEAST

A lady went into a fashionable Boston shop to buy a wrap, and in course of her search for the right thing picked up from the counter a cloth jacket, the color of which pleased her. It was dark red but

heavily braided, and to her taste it would have looked better without the elaborate trimming. Holding it up to inspect its peculiar cut, she said to the attendant: "I should like this one. It is very handsome, except for all that common passementerie on the front." "Excuse me, madam," said a voice behind her in haughty tones, "Excuse me, that is my jacket, which I've just laid off to try on another."

A MODERN PARADISE.

A place on earth has been found where taxes are unknown. It is a territory bordering on the northern line of Lincoln county, Me., called "Hibbert's Gore." It contains 334 acres of land and ten flourishing families. It is bounded by the lines of three counties, Knox, Lincoln, and Waldo, but is not claimed by either. The inhabitants do not maintain a municipal organization and cannot vote for President, Governor, members of the Legislature, or town officers, but they are contented with their lot, have fine farms and good roads, their pork barrels and potato bins are open to one another, and they do not care a snap about politics.

APPLICATION FOR KEEPING THE HANDS SOFT AND SMOOTH.

Professor Valenta, in *Rundschau* (Prag), recommends a simple procedure. The hands, after washing and drying thoroughly, are well anointed with *unguentum emmoliens*—cold cream; a small quantity of *spiritus saponatus* is poured in the hollow of one hand and this rubbed vigorously until a lather is produced. The fatty lather is merely rubbed off.

This method has been employed in the professor's clinic for twenty years, and in consequence his hands are much admired for their smoothness and natural color.

A SNAKE STORY, SAD, IF TRUE.

Mrs. Mary Edminson and her little daughter went fishing near Somerville, Ala., the other day. Mrs. Edminson kneeled by the creek and bent down to drink from the running water, when a large water moccasin bit her on the left side of the neck, sinking its fangs deep and fast in her flesh, so she had to pull it loose. Her daughter helped her up the bank of the creek, and upon her mother saying that she was very sick, left her and ran for help. When the child got back with her father they found the mother dead. She had tried to go to the house, but died on the way.

HE PRESERVED HIS EQUANIMITY.

It is told of Dr. Thomas, now Assistant Bishop of Kansas, who was renowned in Yale and after his graduation as a chess player, that suddenly he gave up his favorite game. Asked the reason for his conduct, he said: "I found that I took so much interest in the game that when I was beaten, it aroused in me feelings that I could not conscientiously entertain. There was nothing left for me to do but to give up chess."

He thus observed one of the fundamental rules of hygiene by avoiding that which would ruffle and annoy him.

A FATAL RAT BITE.

Miss Elvira Delanoy is dying in a New London hospital from the effects of the bite of a rat. Six weeks ago, while in Porto Rico, on her aunt's plantation, she received the bite as she lay in a summer house. Nothing was thought of the scratch, but before the brig Morancy reached New London with Miss Delanoy she was suffering from blood-poisoning, and now there is little hope of her recovery. It is thought that the rat had

eaten poisoned food placed among the sugar canes for the purpose of killing him and his kind.

CARDINAL MANNING AT NIGHT.

Cardinal Manning is described by a recent visitor as "weirdly impressive at night." Wearing his black cassock and scarlet cap, seated by the blazing wood fire in his study, in which fifty couples might waltz with perfect comfort, his Eminence will discuss any subject from the Decrees of the Council of Trent down to a paragraph in the society papers. No subject is too large, no topic too small for him to converse upon. He is a teetotaller—has been one for many years—as all know; and eats just as much as will keep the machinery of the body properly lubricated and no more.

HOW THE CLERGYMAN SURPRISED HIS WIFE.

A clergyman of Auburn, Me., after eating luncheon in a railroad eating-house, picked up what he thought was his bag and went on his journey. When he got home the bag was opened in the presence of his wife, who was grieved to see lying side by side several bottles which, according to their labels, contained fire-water of the strongest kind. The bag belonged to a drummer for a liquor house, and the drummer was also probably surprised when he found that in the bag that he had were three solid, orthodox sermons.

BOYCOTT THE PLUG HAT.

The San Francisco *Examiner* calls upon all adult male citizens to boycott the plug hat and to indulge in the use of hair oil. "Much," it says, "as we sometimes laugh in our sleeves at the vanity of using hair oil, yet the experience of the African Nubians, who consume all the grease they

can get on their woolly heads, would seem to favor the practice in preference to water, which most generally contains more or less matter that is injurious to the hair. There is no baldness among the Nubians, whose hair is greased stiff all the time, besides living in the scorching sun."

HOUSE TO HOUSE INSPECTION IN MICHIGAN.

The Michigan State Board of Health has undertaken an important sanitary enterprise, which is nothing less than a house-to-house inspection of every city and incorporated village in the State. The work will be carried on through the local boards acting jointly with the State organization, and the results will be compiled and published in a single report. The magnitude of this undertaking and the vital importance of its purposes are such as must make its successful completion a highly valuable contribution to sanitary science.

POISONOUS HAT LABELS.

An official of this city, says the *Biddeford* (Me.) *Times*, has been troubled of late by a small sore appearing upon his forehead. He could not explain its cause, but it kept increasing in size and soreness. He bathed it with a healing lotion and covered it with court plaster and still it continued to pain him. To-day he discovered the source of the trouble. It was a small green tag which the manufacturer or merchant had placed upon the band of his hat. A physician told him that the sore was the result of poisoning due to the arsenic in the green tag.

FLOURISHING MORMONS.

The Press says the fact that the Mormons are likely to add more than 700,000 European converts to their number this

year does not improve the prospect for social and political reform in Utah. The enforcement of the laws in that territory under the present Administration is at best but half-hearted and spiritless, and the vigor with which the church authorities are scouring the world for recruits to their ranks shows that they have little fear of annoyance from the powers at Washington.

WHY THE KAISER WAS SICK.

The *Pittsburgh Chronicle* relates the following:

"Ach, Pismarck. I vos a very sick man, don't it?" remarked the Emperor of Germany to the Chancellor.

"By crashtus, vos der matter vos?" asked Bismarck in alarm.

"Look at dot, and tole me no questions."

And Wilhelm showed the Chancellor a picture of himself which had been printed in an American paper.

THE BOY AND THE EGG.

"My son," said Mr. Spriggins to his little son, who was devouring an egg—it was Mr. Spriggins' desire to instruct his boy—"my son, do you know that chickens come out of eggs?" "Do they, father?" said the young hopeful, "I thought the reverse." The elder Spriggins drew back from the table sadly, and gazed on his son, then put on his hat and went out.

GREASE IN PIPES.

Greasy water should not be thrown down waste pipes. It is a fact that the grease will accumulate in the pipe and block it up. We have known cases where the whole calibre of a waste pipe has been blocked by the gradual accumulation of grease.

A GLOSSARY OF DEEPENING VILLAINY.

The *Washington Post* fathers the following :

Taking	\$1,000,000	is called	Genius.
Taking	100,000	is called	Shortage.
Taking	50,000	is called	Litigation.
Taking	25,000	is called	Insolvency.
Taking	10,000	is called	Irregularity.
Taking	5,000	is called	Defalcation.
Taking	1,000	is called	Corruption.
Taking	500	is called	Embezzlement.
Taking	100	is called	Dishonesty.
Taking	50	is called	Stealing.
Taking	25	is called	Total depravity.
Taking	one ham	is called	War on society.

MEASURE YOUR CHILD'S CHEST.

If you have hollow-chested children, pass a tape measure around the chest, below the arm-pits and record the measurements. Then teach the child to practice forced inspiration, (so as to expand the chest as much as possible), say eight or ten times several times a day, and offer a prize for each inch added to the circumference of the chest. The result will surprise you. Your flat-chested child will become a full-chested boy or girl and need have no fear of consumption.

WATERED MILK IN MEXICO.

A correspondent says that in Mexico milk is milked directly from the cow at the big dairies into the cook's pitcher, thus insuring its pureness. But the Mexican milkmen are not so guileless as the correspondent thinks they are. Many of them have a bottle filled with water concealed under their cloaks, and while milking, they manage by means of a rubber tube to transfer a goodly portion of the water into the milk pitcher.

IVY ON HOUSES.

An English experimenter finds that, contrary to general opinion, a growth of ivy over a house renders the interior entirely

free from moisture ; the ivy extracts every possible particle of moisture from wood, brick, or stone for its own sustenance, by means of the tiny roots, which work their way even into the hardest stone. This may be true, but, at the same time, these heavy growths, keep off the sun and are therefore, at least, not desirable.

AN AMERICAN SANITARIAN IN LONDON.

Hannah M. Longshore Potts, M. D., is the name of an American Friend who is lecturing on physiology and hygiene to London auditors. She boldly asserts that the human race is not descended from monkeys, and that the regulation dress of men and women is ridiculously unhealthful. She possesses a strong vein of "American humor," and is drawing large houses.

THEY FEED AT THE TROUGH.

"Which am the properest way to suppress one's self? Does yer say, 'We eated at de table,' or 'We has done ate at the table?'" As they could not agree, the question was referred to Uncle Mose for his decision, which was: "In the case ob you two niggahs none of you am right. De properest way for sich cattle as you two am to say, 'We fed at de troft.'" "

WHEN TO BATHE.

It is best to bathe just before going to bed, says the London *Lancet*, as any danger of catching cold is thus avoided, and the complexion is improved by keeping warm for several hours after leaving the bath. A couple of pounds of bran put into a thin bag and then in the bath tub is excellent for softening the skin. It should be left to soak in a small quantity of water several hours before being used.

DON'T BITE YOUR THREADS.

It is an almost universal practice among women to *bite* threads when engaged in sewing. This custom is greatly to be deprecated. To say nothing of the possible danger of an accumulation of thread in the stomach, one is very likely to chip the enamel of the teeth and thus expose these important organs to danger of decay. It may be a little more troublesome, but it is certainly wiser to cut or break the thread.

FROM THEIR CITY RELATIVES.

About this time the country aunts and cousins begin to receive affectionate and highly perfumed letters from their city relatives, who have been too busy to write all winter. They want to know if the farmer man has planted any of "those nice fresh eggs we had last summer," and if the dear old cow has begun to set on the fresh butter.

THE DRUGGIST WHO SOLD DRUGS

Omaha Druggist—"That was a strange blunder in Washington, wasn't it?" Kansas Druggist—"I didn't hear of it." "You didn't? Why, a prominent druggist there killed himself by taking a drink of aconite in mistake for whiskey." "Well he ought to have known better than to keep drugs in his stock. They are dangerous things."

OLEOMARGARINE IN GREAT BRITAIN.

The imports of oleomargarine into the United Kingdom last year amounted to something over \$15,000,000. For the first three months of the present year the imports were more than \$5,000,000. Beef fat seems to have some commercial value after all.

FINLAND IMMIGRANTS.

It is observed that among the immigrants arriving at Castle Garden, New York, there is a large proportion from Finland. This is a comparatively new element, and its representatives are, as a class, about the finest types of physical manhood to be met with. These tall, robust, and intelligent men strike for the Northwest, and are far preferable to the host coming from "Sunny Italy."

INSPECTION OF MEAT IN BERLIN.

The inspection of meat in Berlin is a very important matter. Twelve veterinary surgeons are employed to stamp it before slaughter, and forty microscopic samplers are continually engaged in examining the meat exposed for sale. Besides these one hundred experts are employed in various duties, twenty-six of whom are women.

A TOT'S LOGIC.

Babyhood says: "Two little boys were put to bed for the night, and one, feeling more lively than the other, was told by the latter: 'If you don't keep still I will ask God to tie your feet.' The power being doubted, the little one replied: 'Well, He stuck you all together once; guess it's easy enough to tie your feet if He wants to.'"

DEATH CAUSED BY JUMPING ON A RAIL.

A young man up in the State died suddenly recently. A post-mortem has been made and it is found that he had died from internal injuries received while making a fence. After each rail had been placed in position he would jump on it to test its strength, thereby causing injuries from which he died.

WHY THE PROOF-READER WAS KILLED.

The editor wrote "Old Gifts in New Lights," and it appeared in print "Old Girls in New Tights."

If our next issue is delayed our readers will understand that it is because we are in jail for having visited the same vengeance on the proof-reader who allowed so many errors to creep into our May issue.

THE MONROE DOCTRINE.

"What about the Monroe doctrine?" was asked of a village candidate. "Oh, well, now," said he, "when it comes to that, thar's jest as good doctors now as there ever was. All this talk about Monroe's doctrin' is nonsense. Dr. Buck standin' thar, is as good doctor as any uv them."

THOUGHT HE WOULD BE A LION-TAMER.

"And what do you expect to be when you grow up, Bobby?" asked the minister, "a lawyer like your father?" "No," Bobby replied. "Ma says I'm too much like pa to make a successful lawyer. I did think I'd be a drum major, but I guess I'll be a lion tamer."

GRANT'S MEMOIRS.

Mrs. Grant has just received from Charles L. Webster a check for \$33,384.53 as additional profits on the sale of *General Grant's Memoirs*. She has thus received to date a total of \$394,459.53. The financial success of Grant's book is unprecedented in the history of literature.

FASHION FAVORS HYGIENE.

The pompadour heel is now only permissible in the finest shoes and slippers, the low, broad English heel being exclusively used for walking purposes.

A CANDIDATE FOR DYSPEPSIA, BRIGHT'S DISEASE AND AN EARLY GRAVE.

An American in Paris recently advertised for a good plain cook, stipulating that she must be a Deist, stating at the same time that his only god is his stomach and that his particular vanities are dishes cooked *a la diable*.

BACHELORHOOD A DISGRACE IN MASSACHUSETTS.

That was a vivid remark of an unmarried lady, who was being chaffed about her state of single blessedness. "It's nothing to be ashamed of, being an old maid," she said to her tormentor, "but to be an old bachelor like you is a disgrace in Massachusetts."

THE PLURAL OF CHILD.

A school board examiner recently asked the following questions of a little girl: "What is the plural of man?" "Men." "Very well; what is the plural of child?" "Twins," immediately replied the little girl.

A BULL ARGUMENT ON ICE.

"I see that bacteria have been discovered in Hudson River ice," observed Fangle.

"Ah!" replied his wife, "that will be another excuse for raising the price, I suppose."

A HYGIENIC RESTAURANT.

The latest fad in London, according to *Figaro*, is a hygienic restaurant. It will be a dining place for dyspeptics, whose dinners will be actually prescribed for them when they go in.

CHOLERA INFANTUM!

If the Profession will observe the difference between

CARNRICK'S SOLUBLE FOOD

FOR INFANTS

and other Foods in the market, they certainly will use no other,
especially in the summer season.

**IT IS ENTIRELY DIFFERENT FROM ANY FOOD THAT HAS
EVER BEEN INTRODUCED.**

FORMULA.

Equal proportions of the solid constituents of cow's milk and best quality of wheat, the starch of which is converted into *Dextrine*, in powder form and ready for immediate use. Its chemical composition is almost identical with an average sample of human milk.

DIGESTIBILITY.

The casein of the milk in Carnrick's Soluble Food is sufficiently digested with pancreatine to render it light and flocculent like the casein of human milk, and as easily digested by the infant.

DEXTRINE VS. MALT SUGAR.

The starch in Carnrick's Soluble Food is converted into *dextrine* instead of malt sugar. *Dextrine* largely stimulates the normal secretions of the stomach and cannot ferment. Malt sugar foods are in a condition to immediately ferment when ingested by the infant.

CHOLERA INFANTUM.

Prof. Vaughan, who has experimented largely with milk during the past two years, believes that Cholera Infantum is caused in most cases by the use of impure milk; consequently the only perfectly safe Food to use in the summer season, is Carnrick's Soluble Food, for unlike all other prepared Foods, it requires no addition of cow's milk.

THE MILK USED IN CARNRICK'S SOLUBLE FOOD.

Those who supply us with milk are not allowed to feed their cows upon sprouts, brewers' grains, slop-feed, or any unsuitable food, and are required to observe the strictest cleanliness and to sign a contract empowering us to refuse their supply at any moment. See copy of contract in our sixty-four-page pamphlet.

THE USE OF POWDERS FOR PEPTONIZING MILK.

Cow's milk cannot be digested in the household by the nurse or mother with any degree of certainty, besides, the same danger arises from the use of impure milk or milk that has undergone a change not perceptible to the taste.

CARNRICK'S SOLUBLE FOOD COMPARED IN PRICE WITH OTHER FOODS FOR INFANTS.

Our Food contains from fifty to one hundred per cent. more nutritive matter than any prepared foods in the market and is consequently very much less expensive to use. It thoroughly nourishes the child whilst all other foods must be combined with milk. Carnrick's Soluble Food is put up in half-pound, pound, and five-pound cans.

We will send gratis and post-free on application a sample of CARNRICK'S SOLUBLE FOOD to any physician.

REED & CARNRICK, New York.

BOVININE.

BUSH'S FLUID FOOD

Containing $34\frac{70}{100}$ Per Cent. of Soluble Albuminoids.

The vital principles of Beef and Mutton concentrated. A highly-condensed Raw-Food Extract. Acceptable to the most delicate taste and smell. Does not become putrid in a short time as all other raw foods do. Retained by irritable stomachs that reject all other Foods.

It assimilates more readily than any other Food known to the Medical Profession. Bovinine under the microscope shows the blood corpuscles in their normal condition strongly marked, while in all other Foods or Extracts this vitally-important element is destroyed by the action of heat in cooking.

In Typhoid Fever the pathological condition consequent in the large and small intestine about the ileo-caecal valve from the inflammation and suppuration of the agminated and solitary glands demands a food containing no excrementitious matter, while the depressing effects of the disease upon the vital powers through the nervous system make a highly nutritious and stimulating food absolutely necessary.

These indications for a food are met in Bovinine, which contains all the albuminoids of Beef and Mutton in a very concentrated form, unchanged by heat or chemicals, as well as its stimulating meat salts. The process of its extraction also insures perfect freedom from extraneous substances.

Bovinine alone, or as an adjuvant to the milk diet ordinarily employed, is of the greatest benefit in either the acute stage of the disease or during convalescence from it, as it is readily borne by the weakest stomach, and is acceptable to the taste of every patient.

In the vomiting of pregnancy the extreme difficulty of nourishing the patient is obviated by Bovinine given in small doses frequently repeated. This symptom of reflex action cannot always be entirely controlled, but its frequent recurrence is diminished, better nutrition assured, and the danger to life from inanition averted.

In all cases where rectal alimentation is necessary, no more eligible food preparation can be found than Bovinine. Reports of several cases are at hand showing increase of strength and weight in patients nourished for weeks upon Bovinine exclusively, administered in this manner.

In Diphtheria, a disease characterized by extreme prostration and rapid failure of the vital powers, where there is the most marked indication for a stimulating diet capable of bringing almost instant response, Bovinine is a most reliable food, its concentration and fluidity recommending it on account of the local lesions in and about the pharynx, while its nutrient value is demonstrated by its adaptation to the excessive prostration incident to the disease.

In disturbances of the intestinal tract accompanied by gastric irritation; in cancer of the stomach or rectum; in supplying the waste of albuminuria; in the marasmus of infancy or old age; in scrofulous conditions; in phthisis, and in so-called dyspeptic conditions, Bovinine will be found of signal service, securing better nutrition and assimilation, and alleviating the conditions present. Bovinine is a raw food and is neither partially nor wholly digested, so that when given in cases of enfeebled digestive powers it does not still further increase the inability of the gastric forces to perform their work, but restores them by its physiological stimulation to their normal effectiveness.

Mr. WASHINGTON, Baltimore Co., Md., Nov. 9th, 1886.

THE J. P. BUSH MANUFACTURING CO.

Gentlemen:—Will you oblige me by sending me six 12-oz. bottles of BOVININE by express to this place, C. O. D. My wife finds it to agree with her so well, and we use so much of it, that I hope you can sell this to me at what we pay for it for the Medical Department of the Army. Very truly and respectfully yours,

R. MURRAY, Surgeon-General U. S. A., Retired.

I have been prescribing BOVININE in my practice for some time, and am highly satisfied with the results. In one case of Typhoid Fever, where every other nourishment was rejected, the BOVININE was retained, and, I feel confident, saved my patient.

JOHN MILTON DUFF, M.E.,

Professor of Obstetrics in the Western Pennsylvania College.

Gentlemen:—We have used your BOVININE extensively in this institution, with very satisfactory results. Its beneficial influence has been especially marked in cases of Typhoid Fever.—"DETROIT SANITARIUM."

F. W. MANN, Resident Physician.

CAREFULLY PREPARED BY THE

J. P. BUSH MANUFACTURING COMPANY,
42 and 44 Third Avenue, Chicago. | 2 Barclay St., Astor House, New York.

FOR SALE BY ALL DRUGGISTS.

In writing, please mention this journal.

The Annals of Hygiene.

VOL. 2.

PHILADELPHIA, JULY 1, 1887.

No. 7.

Communications.

AN ANALYSIS OF SEVEN OF THE MOST PROMINENT FOODS FOR INFANTS AND INVALIDS.

MADE BY PROF. HENRY TRIMBLE,

Professor of Analytical Chemistry, Philadelphia College of Pharmacy.

[Specially made for *The Annals of Hygiene*.]

The report upon seven of the most prominent artificial foods for infants and invalids, which we publish below, is an exceedingly valuable contribution, and should be carefully read, studied and considered by physicians, to whom the public looks for guidance in this important question.

Before considering the report, we must premise by saying that all these foods were bought from one of our largest and most reliable houses (without any knowledge on the part of the manufacturers that such an investigation was contemplated), were removed from the boxes or bottles in which they were bought, were placed in ordinary papers or bottles, numbered respectively, and so sent to Professor Henry Trimble, of the Philadelphia College of Pharmacy, who was requested to examine them and make his report by numbers, he not knowing, until he reads this article, what foods he was examining.

A careful study of the report, as well as the table at the end, will serve to make

clear the merits of the various foods, but a few words may not be out of place.

It will be seen that foods Nos. 1, 2 and 3 are worthy of special note. By comparing the second sample of food No. 1, that was analyzed, with the published analysis of this food, it will be seen that it contains even more albumenoids and fat than the manufacturers claim for it; also, while it contains a large percentage of starch, it will be found that it exists in a form most favorable for easy digestion and assimilation. While, of course, much difference of opinion exists as to what is just the best composition for artificial foods, yet when we note that food No. 1 contains all the elements of nutrition, in very well regulated proportions, and that it is so liberally supplied with albumenoids and fat, we feel inclined to think that it approaches very closely to, if it does not indeed reach, the standard of an ideal food.

Food No. 2, while containing less fat and less albumenoids than No. 1, yet, on the whole, bears out very well the published analysis, and must be ranked very high as an ideal food for infants and children. It is to be noted that its percentage of mineral matter is greater than any other food. The report on food No. 3 is most satisfactory. It will be noted that the claim made for this food by its manufacturers is that its basis is sugar of milk, and, by reference to Professor Trimble's report, it will be

found that the proportion of sugar of milk is very large, while the number and percentage of the other ingredients is very satisfactory. This must be ranked among the best.

Food No. 5 shows up very well. While the proportion of albumenoids is not very high, yet, next to No. 2, it contains the largest proportion of mineral matter, and is remarkably rich in carbo-hydrates.

We would earnestly recommend physicians to study this report. Unbiased and impartial, it is a report of inestimable value, for it definitely settles, on a scientific basis, the very important question of artificial foods.

THE CHEMICAL LABORATORY
OF THE
PHILADELPHIA COLLEGE OF PHARMACY,
145 NORTH TENTH ST.,
Philadelphia, June 30, 1887.

DR. JOSEPH F. EDWARDS:

Dear Sir:—Enclosed you will please find the report on my examination of the seven samples of infant foods which you submitted to me. These samples, when received from you, bore no evidence of their origin, the only marks on the packages being the number on each by which it will be designated in my report. I have no knowledge whatever that would lead me even to suspect the names of the manufacturers by whom these different samples have been prepared.

[Signed] HENRY TRIMBLE.

Sample No. 1.

This food is of a light brown color, and possesses a fishy odor and taste. 59.00 per cent. of it were found to be soluble in cold water. The chemical examination resulted in the following:

Moisture, . . .	7.30	per cent.
Mineral Matter, . . .	1.53	"
Fat, . . .	3.49	"
Albumenoids, . . .	15.38	"
Gum, . . .	2.72	"
Dextrin, . . .	3.10	"

Cane Sugar, . . .	29.02	per cent.
Glucose and		
Maltose, . . .	7.38	"
Starch, . . .	26.77	"
Cellulose and		
Insoluble, . . .	3.31	"
	100.00	"

The methods by which these constituents in this and the other foods were estimated will be given under the general remarks after the individual results. This food either does not keep well, or else it is somewhat variable in composition;* as a second sample of more recent manufacture was partly examined and found to contain 6.84 per cent. of moisture, 4.60 per cent. of fat, and 22.09 per cent. of albumenoids. Although the above amount of starch is present no granules were detected by the microscope, thus rendering probable the statement that it is present in the gelatinous form.

Sample No. 2.

In physical properties this preparation is a creamy, yellow-colored, fine powder, having an odor resembling wheat flour with a slight suspicion of cheese; the taste is pleasant. Cold water dissolved 48.20 per cent., and the percentage composition was found to be as follows:

Moisture, . . .	7.45	per cent.
Mineral Matter, . . .	3.90	"
Fat, . . .	2.77	"
Albumenoids, . . .	16.79	"
Gum, . . .	3.92	"
Dextrin, . . .	8.20	"
Glucose and		
other Sugars, . . .	10.94	"
Cane Sugar, . . .	4.22	"
Starch, . . .	38.46	"
Cellulose and		
Insoluble, . . .	3.35	"
	100.00	"

*It should be said, in justice to the manufacturer, that when the first sample of food No. 1 was bought we were informed that it had been in stock a long time, and had been procured before the process of manufacture had been perfected, for which reason we would assume that the second sample furnishes a fairer estimate of this food as it is found at present, the fishy taste not being noticed.—Ed.

Granules of wheat starch were distinctly and abundantly visible by the microscope.

Sample No. 3.

A light fine powder of almost white color, odor resembling barley and pleasant gritty taste, characterized this sample. It dissolved in cold water to the extent of 43.70 per cent. The other constituents are represented by the following percentages:

Moisture, .	6.81	per cent.
Mineral Matter, .	2.61	"
Fat, .	1.29	"
Albumenoids, .	11.14	"
Glucose and Milk Sugar, .	22.63	"
Cane Sugar, .	3.01	"
Starch, .	45.96	"
Cellulose and Insoluble, .	6.55	"
	100.00	"

Sample No. 4.

This is a dark brown liquid, with some suspended insoluble matter, having a vinous odor and a saline taste. Its percentage of composition is as follows:

Water, .	73.43	per cent.
Alcohol, .	5.78	"
Mineral Matter, .	1.24	"
Fat, .	2.60	"
Albumenoids, .	15.40	"
Boric Acid and Insoluble, .	1.55	"
	100.00	"

It is to be regretted that, in the limited time, the boric acid could not be estimated. It is sufficient to say that of its presence there is not a shadow of a doubt, and that it is present to assist the alcohol in preserving this preparation, which is undoubtedly a dilute extract of meat.

Sample No. 5.

This food is a granular powder of a light-gray color, a pleasant odor of malt, and a sweet, pleasant taste. It absorbs water readily from the air, and, if so

exposed, becomes a sticky solid resembling molasses candy. Cold water dissolved 93.24 per cent. of it. It was found to be constituted as follows:

Moisture, .	11.42	per cent.
Mineral Matter, .	3.28	"
Albumenoids, .	10.17	"
Gum, .	1.58	"
Dextrin, .	21.24	"
Glucose and Maltose, .	40.68	"
Cane Sugar, .	3.74	"
Insoluble Matter, .	7.89	"
	100.00	"

Sample No. 6.

In physical properties this sample closely resembles No. 5, except that it is somewhat lighter in color. It was found to be soluble in cold water to the extent of 92.90 per cent., and to have the following composition:

Moisture, .	9.74	per cent.
Mineral Matter, .	2.19	"
Albumenoids, .	9.57	"
Dextrin, .	35.22	"
Glucose and Maltose, .	39.87	"
Cane Sugar, .	1.65	"
Starch and Insoluble, .	1.76	"
	100.00	"

The microscope revealed starch granules having a close resemblance to those of wheat.

Sample No. 7.

This, like No. 4, is a liquid preparation of a dark-brown color, having a peculiar vinous odor and a saline taste. The following composition shows it to be an extract of meat with alcohol:

Water, .	73.72	per cent.
Alcohol, .	9.17	"
Mineral Matter, .	.47	"
Fat, .	1.12	"
Albumenoids, .	15.52	"
	100.00	"

Summary of Analyses.

The following comparative statement of these results will assist the physician in selecting those foods which possess the most nourishing and digestible constituents:

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	No. 7.
Moisture { 1st Sample.....	7.30	7.45	6.81	73.43	11.42	9.74	73.72
{ 2d Sample.....	6.84						
Mineral Matter.....	1.53	3.90	2.61	1.24	3.28	2.19	.47
Fat { 1st Sample.....	3.49	2.77	1.29	2.60	.00	.00	1.12
{ 2d Sample.....	4.60						
Albumenoids { 1st Sample.....	15.38	16.79	11.14	15.40	10.17	9.57	15.52
{ 2d Sample.....	22.09						
Carbohydrates.....	68.99	65.74	71.60	(Alcohol.)			(Alcohol.)
Cellulose and Insoluble.....	3.31	3.35	6.55	5.78	67.24	78.50	9.17
				1.55	7.89	.00	.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Methods Used.

For determination of moisture from one to three grams were heated in a water oven until the sample ceased to lose weight. The mineral matter was estimated by heating in a platinum dish to low redness, until a white ash remained. The amount of fat was determined by extracting with ether and evaporating the ethereal solution at a low temperature. Albumenoids were determined by combustion with soda lime in the usual manner, and multiplying the amount of nitrogen so obtained by 6.39, the highest factor admissible, which is that used for egg albumen. The above results for albumenoids are as high as it is possible to make them by means of the nitrogen method. The carbohydrates were determined by estimating the sugar in a cold aqueous solution of the samples with Fehling's solution, then inverting the sugar by hydrochloric acid at 70° C. for ten minutes, and by sulphuric acid at 100° C. for four hours. In another portion, the total carbohydrates were estimated by heating the food (soluble and insoluble) with sulphuric acid until converted into glucose, and then determining this with Fehling's solution. The dextrin was separately determined by precipitation with absolute alcohol.

(Signed) HENRY TRIMBLE.

Key to Above Report.

No. 1. Emerson's Albumenoid Food, 43 Park Place, New York City.

No. 2. Carnrick's Soluble Food, Harrison and Hudson Sts., New York City.

No. 3. Wells, Richardson & Co.'s Lactated Food, Burlington, Vt.

No. 4. Bush's Fluid Food (Bovine), No. 2 Barclay Street, New York City.

No. 5. Mellin's Food, Boston, Mass.

No. 6. Horlick's Food, Racine, Wis.

No. 7. Murdock's Liquid Food, Boston, Mass.

THE HYGIENE OF CHILD BEARING.

BY THEOPHILUS PARVIN, M.D.

Marriage usually precedes human reproduction, an order which ought not to be reversed. Child-bearing is in almost all cases the natural sequence of marriage, and in only very rare instances is the prevention of this result morally or legally justifiable.

Thus inter-dependent as the two are, the hygiene of child-bearing can be better understood after a brief consideration of marriage.

The English word female as applied to woman, the French *femme* and the Latin *femina*, or rather *foemina*, have their common derivation from a Sanscrit

root signifying that which produces. Language thus bears witness to the special function of the female sex; women are producers, and in obedience to the Divine command contribute to multiply and replenish the earth. Among the Jews sterility was regarded by the wife as one of the greatest misfortunes: Give me children or I die! was the pathetic plea of Rachel kneeling at the feet of Jacob. So, too, child-bearing, was once regarded as the vindication of womanhood, and the maternal function made the marriage tie stronger. Having borne him children, was one of the arguments used by Catherine of Arragon in her appeal to Henry VIII for the indissolubility of the marriage bond and for the preservation of her queenly rank.

The orange blossoms with which brides are sometimes decked at the marriage ceremony are the symbols of fertility; though probably this fact is unknown to some of the wearers in these days, when, at least in fashionable life, child-bearing is often not regarded as favorably as it once was.

The Christian Church has been charged with disparaging marriage and with upholding the claims of celibacy, that which a recent French writer has contemptuously called a sanctified sterility. But without referring to a particular church in which so many celibates, both male and female, are found, and who fulfill such important functions in its economy, a quotation will be made from an eminent Episcopalian divine, who in his day from his great wisdom received the title of judicious, "judicious Hooker," which will show his view of the marriage relation: "In this world there can be no society durable otherwise only than by propagation. Albeit, therefore, single life be a thing more angelical and divine, yet sith the replenishing of earth with

blessed inhabitants and then of heaven with saints everlastingly praising God, did depend upon man and woman, he which made all complete and perfect, saw it would not be good to leave man without a helper unto the fore-alleged end."

Lord Bacon, looking upon marriage from a different standpoint, said: "He that hath wife and children hath given hostages to fortune; for they are impediments to great enterprises, whether of virtue or of mischief. Certainly the best works and of greatest merit have proceeded from the unmarried or childless men; which both in affection and means have married and endowed the public." Nevertheless, it would be possible to prove that much of the world's best work has been done by the married, both men and women, and that in the family relation some of the noblest of human qualities are developed; at least this much will be presently established, that marriage promotes health of body and of mind, and that it conduces alike to morality and longevity.

Among modern systems of philosophy, probably none has so diverted marriage from that which by Jew, Christian and Mohammedan has been regarded its chief purpose, the continuance of the race, as that of Comte. This philosophy taught that the individual in society was nothing—nay, the separation into such units was the beginning of anarchy, —but that the family was the true unit, and this was created by marriage. But the union thus formed was not solely for the propagation of the species, its design being especially for the perfection of the sexes; it exalts altruism and sociability and lessens personality and egoism. This doctrine, making the chief object of marriage quite independent of the reproductive function and the associated instincts, naturally leads to the idea of absolutely

chaste unions, the sexual and the maternal instinct being completely excluded ; it claims that all the personal and social power of marriage can be realized in a union which, though more tender, always remains as chaste as the bond between two affectionate brothers, and that love may exist between husband and wife without gratifying the sexual instinct, nay, be stronger because that instinct is denied.

Now, while it is not impossible to find marriages such as Comte suggests, they are exceptional, and one who looks upon human nature as it is, cannot help recalling the exclamation of Proudhon: "O, all you young men and maidens, who dream of a perfect love, know right well that your Platonism is the straight road to Sodom !"

Consciously or unconsciously the reproductive instinct is in the majority of cases one of the chief motors in determining marriage. This instinct, which man has in common with animal creation and which was designed to secure the continuance of life, becomes in him more elevated and ennobled according to race development and according to his individual advancement and personal character. In a suitable marriage, too, it becomes weaker, "the ape and tiger die," while a pure affection grows in beauty and power until it is strong as life itself, yea, stronger than death. Schiller has most truthfully declared :

"Summer her bloom must shed,
Ere Autumn's fruit can swell ;—
And Passion in many a heart is dead,
Where Love remains to dwell."

So much seemed necessary to correct some false views of the marriage relation, for the dreamer who thinks of it as only a spiritual union between two congenial minds, utterly disclaiming any sexual element, is as far astray, as is the licentious man who degrades it to basest bestiality, making his wife a harlot in every-

thing but name, though the error of the former be much more venial.

According to an eminent ecclesiastical authority, marriage is a natural, civil, and religious contract. Without discussing this definition, it may be remarked that the marriage ceremony in some churches very plainly indicates the supposed inferiority of the bride, especially in what is called "giving her away," a custom that is quite ancient, and which will probably be finally abandoned. Hooker, in explanation of this custom, has said, "all women which had not husbands nor fathers to govern them had their tutors, without whose authority there was no act which they did warrantable, and for this cause they were in marriage delivered unto their husbands."

Admitting marriage as a natural contract, it is reasonable to conclude that the results of the relation are beneficial ; and investigations confirm this probable conclusion. Bertillon's statistics prove that crime is much less frequent on the part of the married than on that of the unmarried, and that marriage furnishes a stronger moral protection for women than for men, that is the married female is by the fact of her relation less liable to commit a criminal act than the married male ; but if she becomes a widow her moral position and that of the widower are opposite instead of correspondent, that is she is more apt to do a criminal act than he is. Child-bearing especially protects from the commission of crime, for the record of the courts show that mothers are less frequently than sterile wives charged with violation of the laws.

Mental disorder occurs with relatively greater frequency in the unmarried and in widows than in married women. Regarding suicide as a manifestation of insanity, it is found that a married woman who has children is more strongly bound to life, that is fewer such take away their own lives.

In view of these facts we may, slightly modifying the language of Lord Bacon, say that the married woman, especially if she has had children, has given hostages to society by which in great degree both her morality and sanity are guaranteed.

There is a popular notion that the married woman's life is shortened, the special factor in this supposed lessening of average years of course being child-bearing, the dangers attending labor, and the diseases following it. This is an error. Further, though there are no statistics showing the relative morbidity of married and unmarried females, yet if the mortality of the former is less than that of the latter, the probable conclusion is that the married suffer less from at least serious illness—in other words, the morbidity as well as the mortality of unmarried is greater than that of married women. From twenty to twenty-five years French statistics show a slightly greater mortality for the married than for the unmarried; in no succeeding five years of the childbearing period is this the case, but, on the contrary, the percentage of deaths is reversed. So, too, the chances of death in the years immediately following the menopause are greater for the old maid than they are for the matron. Bertillon says that the woman who robs her organs of their appropriate functions, and who deprives her youth of the pleasures of love and of the duties and joys of maternity, has not thus fortified her old age against the causes of death peculiar to it, but has made it more exposed to them. Love and maternity in suitable conditions of marriage, instead of consuming, conserve life, and are a present and future protection. There is no doubt that the force of this argument would be much greater if it rested upon statistics collected since the

general adoption of antiseptics in obstetric practice, for by their use the morbidity and the mortality of childbed have been materially lessened.

In connection with the relative mortality of married and of single women, marriage occurring, at twenty years or soon after, it should also be stated if women marry under twenty years they incur increased liability to death, in other words, their chances of living are less than if they had remained single. We might add that the same truth holds as to premature marriage on the part of the male; it may be stated in general that while the suitable age for the female to marry is from twenty to twenty-five years, the male ought not to marry before he is twenty-five years old.

An endeavor has thus been made by these preliminary remarks to shed some light upon the special subject engaging our attention, and to prepare the way for its presentation. The ultimate, or essential question involved in the hygiene of child-bearing, is how women may produce living and healthy offspring with the least disorder, discomfort, peril or pain to themselves. This hygiene includes the care of the body and of the mind, in other words, it is physical and psychical; the two divisions thus made will be considered in order.

Though pregnancy is a physiological condition, it is most frequently attended with some discomforts or disorders which, exaggerated, become diseases, or even if neglected may lead to more or less serious consequences; such consequences too, may follow errors in diet, in dress, in exercise, or in the general conduct of life.

One of the earliest indications of pregnancy is irritability of the stomach, and as it is usually more marked in the morning, or may be present only at that

time, it is commonly called morning sickness. In rare instances it has been first manifested at the supposed time of conception, but more frequently is observed at what would have been the regular period for menstruation if impregnation had not occurred. Having once begun it rarely ceases until the latter part of the fourth, or early in the fifth month; in altogether exceptional cases it may continue during the entire pregnancy. In some the disorder is very slight, constituting scarcely more than an indisposition, but in others it is a grave disease demanding prompt and able professional attention. It not unfrequently happens that a woman suffering from what has been called pregnancy-vomiting, utterly rejects her usual articles of food or drink, but finds some new and unaccustomed ones quite acceptable; such indications then oftentimes will suggest a successful treatment. In some cases food will be retained if only a small quantity is taken, or if immediately followed by lying down, or if taken in that position. The disorder may be associated with a very acid condition of the stomach, or with great constipation. The statements just made suggest means of treatment.

In the hygienic management of the nausea and vomiting of pregnancy it is not unusual for physicians to advise the patient to take her first meal, which may be of dry toast or a cracker with half a cup of strong coffee without cream, before rising, and then remaining in bed at least an hour after the food is taken: this plan is in some cases followed by partial or complete success. Ice cold, and effervescent drinks, lime water and milk, extract of ginger with sugar and water may give some relief. Of course if the bowels are confined appropriate remedies for the condition are to be used. Frequent rather than abundant meals are

to be advised, and such articles of food chosen as the desire of patient may indicate, though the notion that the child will be "marked," if this desire be not gratified belongs to a superstitious age.

While the nausea and vomiting of the early months of pregnancy continue, the appetite is in most cases much lessened, and consequently some emaciation may be manifested, and there are more or less bodily weakness and indisposition to exertion. But when the disorder ceases the appetite is increased, the digestion is good, the color improves, and all loss of flesh is repaired and the face becomes full. It is important that the diet should be digestible and nutritious, and so far as possible the constipation which is often associated with the pregnant condition be remedied by it. Stimulating drinks and highly seasoned food are not advisable; nor should an abundant meal be taken in the evening. It is not uncommonly said to the pregnant woman, by injudicious friends, you are eating for two, and therefore should eat twice as much as at other times; but such rule as to the quantity of food required by her is very far from wise.

Exercise must be regulated by the period of pregnancy, and by previous habits. Thus when a woman in the first months is taking much less food than usual, and is further weakened by frequent vomiting, she has little strength, and less disposition for active exercise of body, and naturally prefers to spend as much of the time as she can resting. So, too, toward the end of pregnancy her movements are interfered with by increased weight and change of form; at this period also, she is indisposed and unable to make much exertion. If we observe our more familiar domestic animals, the cow and the mare for example, we see that they do not make very active movements, and

spend very much of their time lying down, as the period of parturition approaches; such examples should be remembered in advising exercise of the child-bearing at the corresponding time. But in the interval between the two periods mentioned moderately active exercise in the open air ought to be taken, if possible, every day; even too, in advanced pregnancy though the movements may be awkward and readily causing fatigue, it is better that a little time should be spent walking in the open air each day; walking is preferable to riding, for by it more active circulation of the blood is secured, and also the function of the skin is excited, the free secretion of the sudoriferous glands diverting from the kidneys, congestion of the latter, with consequences which may be quite serious, being an occasional occurrence in pregnancy. While exercise is earnestly enjoined upon the pregnant woman, she ought to be warned against all violent movements of the body, either active or passive, as in dancing, or in driving over rough streets or roads. If a woman has been in the habit of working constantly each day, as many a poor woman is compelled to do, the amount of exercise she takes in her daily duties will much exceed that required by one not habituated to such constant employment of the body, and therefore a common rule as to amount of exercise cannot be made, but that amount must be determined by previous habits and by personal strength. Nevertheless the hard-working woman when pregnant ought, so far as possible, to lessen her toils and lighten the burden under which she rests. There is a popular notion that a pregnant woman ought not to lift her hands above her head, as in hanging or taking down window curtains, and even some go so far as to forbid her lying in bed with her hands extended above her

head, the belief being that such position or movements of her arms will cause the cord to become looped once or oftener around the child's body or neck; there is no just foundation for this opinion, though sudden and violent extension of either upper or lower limbs is objectionable for other reasons.

Two objects ought to be especially regarded in the clothing of a pregnant woman; one protection from sudden changes of temperature, particularly from her being chilled, and an avoidance of compression of the trunk, the breasts, or of the lower limbs, or any part of them, as from tightly fastened garters. Sudden suppression of perspiration may cause congestion of the kidneys and serious interference with their function, or an attack of bronchitis, the violent coughing resulting from which may produce abortion, or even a pneumonia, which is usually a very serious complication of pregnancy, may occur. As the abdomen enlarges in size in order to accommodate the growing uterus, the form of the chest is temporarily altered, widened to compensate for its lessened length, and therefore compression by the corsets will greatly interfere with the freedom of respiration, as well as hinder the normal ascension of the uterus and injuriously compress this as well as other abdominal organs. A tightly fitting garter may cause or increase enlargement of the veins of the leg, and general compression of the varicose veins of the lower limbs has caused abortion. In regard to avoidance of compressing the breasts, by clothes or corsets, this will be referred to in connection with the special care of these organs.

Habitual bathing is even more essential than in the absence of pregnancy. As a rule, hot baths, especially if prolonged, are to be absolutely rejected, and cold baths used only in case the individual is

quite accustomed to them, but tepid or warm are usually to be preferred. Sea bathing if the water is warm and no violent exercise, as in swimming, is taken, may be permitted; fifteen minutes will be quite long enough to spend in the water.

Regular hours of rest should be observed, and the sleeplessness from which the pregnant woman may suffer, if not obviously dependent upon some physical disorder, as indigestion, neuralgia, etc., may in some cases be prevented by sponging the upper portion of the body, the neck and face with tepid or cool water, or by taking a short walk in the open air, just before retiring. It would be well if the pregnant woman could sleep in a separate bed, and even in a room by herself; in any case the room ought to be well ventilated. In addition to the usual hours of night spent in bed, it is advisable for her to lie down for a short time each day, not only for the purpose of rest, not necessarily or usually to sleep, but in order to relieve her lower limbs of the swelling which results from her standing or sitting for some time, this swelling being in part the consequence of gravity, and in part of pressure by the enlarged uterus upon veins receiving the blood from the lower limbs. Rest is especially important at times corresponding with the periods when menstruation would occur if the subject were not pregnant, in all cases in which there is a liability to abortion, for this liability is then increased.

In this connection it is necessary to speak of a subject of very great importance, a subject of such delicacy that one would gladly avoid reference to it, had not silence been the source of countless evil: reference is made to sexual intercourse during pregnancy. That such indulgence is utterly unnatural, a frequent

cause of abortion, probably an aggravation of nausea and vomiting, and possibly odious to most wives may be admitted. Many heathen nations have unequivocally condemned it, punishing it with the severest penalties, and some polygamous people have justified a multiplicity of wives on the ground of its avoidance. The Catholic church which, more than any other has with its all-searching eye penetrated the secrecies of human hearts and human lives, and sought wisely to regulate human conduct in this regard, has, by such teachers as Ligorius, advised limiting the conjugal act in pregnancy to those cases in which there is danger of incontinence. Sad confession of the frailty of the human will and of the force of human lust! The Great Master taught the Jews that Moses permitted certain liberty as to divorce "because of the hardness of your hearts." The lesson has its instruction for us. Some acts may be permitted in the imperfect development of a people which will be forbidden when that people attain a higher plane. And so too, probably, physicians have yielded to the hardness of human hearts a license in this respect which the individual or race attaining a higher development will cast aside, and be governed by a stricter and purer law. Even with the tolerance of this abuse allowed by some obstetric authorities, most urge that the indulgence should be rare, and that it ought not to occur coincidently with what would be a menstrual period; some take the ground that it must be unconditionally forbidden in the latter half of pregnancy. Certainly total abstinence would be best for each party if men always sought that self-control which exalts, strengthens, purifies and ennobles human nature.

The care of the breasts is one of the most important duties of the pregnant woman. Nature meant the mother to

furnish the offspring nourishment during the first year following birth; she placed the breasts according to an ancient moral philosopher, in such a position upon her body that the mother could fondle and caress her infant while it is nursing; probably the strongest, as certainly the earliest, impressions moral, intellectual, and emotional are made in this relation of mother and child, and the strongest attachments are thus formed. Gracchus, according to Livy, returning a victor to Rome, saw upon the walls of the city his nurse and mother, and to the former he gave a collar of gold, and to the latter only a silver ring, so much greater was his love for the one who had nourished him after the other had given him birth, for the Romans had a maxim, *Quae lactat, mater magis quam quae genuit.*

Maternal nursing is at once the instinct of nature, the example of the mammalia, and the teaching of philanthropists, philosophers and physicians. In view of this it is important that the expectant mother deciding to nourish her infant from her own breasts, make the necessary preparation for this duty. The breasts first formed early in foetal life, remain rudimentary until puberty, when they remarkably increase in size; but their perfect development does not occur until pregnancy, and in the early period of lactation. It not unseldom happens that a young girl at puberty has the mammary glands very imperfectly developed, the delay and difficulty arising in some cases from ill health, from defective vital force, or from taxing the brain by severe and confining study, physical being sacrificed to mental growth. The wrong that has then been done, or the failure that has then occurred, may be in part corrected when pregnancy imparts new life to these imperfect organs; another trial is offered,

an appeal is made to a higher court, which possibly may reverse the decision of the lower, and the mammary glands may be now fitted for their important function. Hence it is very important that in these cases especially the breasts should not be compressed by clothing or corsets, and that there should be ample room for their development. It is essential that the nipple should be large enough to be readily grasped by the infant's mouth; it happens in some cases that this organ instead of presenting the form of a cylinder, somewhat rounded at the top, and notably projecting from the breast, is almost upon the same surface, or even has a depression below that surface at the part where the summit of the nipple should be, that is the organ is retracted. It is possible by patient and gentle means to overcome this retraction, and bring out the nipple so that it will perfectly fulfill its function. For this purpose the finger and thumb seizing the nipple gently draw it out; this method will answer the purpose quite as well as to have the nipple sucked by child or by adult, and probably in most instances will be less violent; the method is to be employed for a few minutes morning and evening, until the nipple has been given its proper size and form; an ivory nipple shield may be worn so as to secure the organ from compressing and furnish it ample room. With a view of hardening the skin of the nipple, and thus it was supposed preventing its becoming sore from nursing, it has been a common practice to apply alcoholic astringent solutions to it. For some years I have doubted the value of this plan, judging by theory as well as from results. It is probably better to simply keep the nipple clean, to apply a little cocoa butter to it in the evening, and bathe it with some cologne water, or tincture of arnica, and water each morning; this prophylactic treatment

of "sore nipples" need not be employed until in the last two or three months of pregnancy.

Pure air is especially necessary for the pregnant woman; she is breathing for two, and each may be injuriously affected by a confined and vitiated air—indeed it is quite probable that pregnancy may be arrested by the accumulation of carbonic acid in a room occupied by her. She ought to shun all crowded assemblies, as well as places of great public excitement; indeed it would seem that a woman far advanced in pregnancy so that every curious eye can read her condition, and possibly wagging tongues make indecent comments, would from her native modesty shrink from public observation, since child-bearing is not now held in such public honor as it was among one of the Greek nations, for when their women were pregnant all men who met them upon the street signified their respect.

The suggestions that have been made may be supplemented by urging that the prospective mother make known to her family physician her condition, and receive from him such instruction, and treatment, if necessary, as he thinks advisable.

Finally, the condition of the mind is to be considered. Pregnancy generally renders women more sensitive, nervous, and excitable. An unkind word, or look, indifference or even thoughtless neglect on the part of the husband, for example, may cause a heartache more severe than a brutal blow or a knife-stab. The pregnant Poppæa dies from a kick upon the abdomen by her husband, that monster of crimes, the cruel Nero, and every now and then a similar instance of black, double murder is recorded. But may there not be frail, delicate, sensitive and nervous wives who bear the heavy burden of maternity, and who may descend into the shadow of death, without the sym-

thy, the kindness, and the care they have a right to expect and which they so much need. Every husband ought at this time to manifest toward his wife the most thoughtful consideration, the kindest care and the most tender love.

While a few women during pregnancy are cheerful, active and vigorous, declaring that they never felt better in their lives, others ordinarily amiable and gay, become morose, irritable, and profoundly depressed. Usually any powerful and depressing mental emotion acts injuriously upon their health, and bodily functions are disturbed by it. So, too, it has often been proved that constant attention to an organ is very liable to produce derangement of that organ.

Hence it is important that the expectant mother should, so far as possible, look without rather than within, and that she should be freed from all causes of mental depression and anxiety.

The discomforts incident to her condition may be mitigated and they are only temporary; the dangers of the future are much less than fear represents them, and often the mountain which lies in one's path that in the distance seemed so steep and its ascent so perilous, proves, when we come to it, little more than a common hill. She may be assured that her actual danger of dying during labor or as a consequence of it, is very slight, probably less than 1 in 200 women then die. Moreover, and this remark applies to all human suffering, possibly in the mysteries of human life constant sunshine and joy are not the best things, and it may be through darkness, sorrow and pain sufferers pass to purer light and higher happiness, and thus there may be a Gethsemane through which each earthly paradise is entered.

There is another aspect of this question to be considered, and that is not the

influence of mental impressions or conditions upon the mother, but the effect of these upon her unborn offspring. That the latter may be affected through the mind of the former is a belief which has been held for hundreds of years, not merely by the common people, but by some of the wisest philosophers and physicians. Quite recently a distinguished German philosopher, Lotze, has made the following statement: "that the phantasy of the mother can impart to her child the features of a picture that has made a strong impression on her, I cannot regard as impossible, in view of undeniable facts."

Those who are skeptical in regard to an influence being thus exerted should read the very interesting paper upon the subject by Dr. Fordyce Barker, and the remarks made by Dr. Busey, both being found in the last volume of the Transactions of the America Gynecological Society.

We may reject many of the cases adduced as evidence of "maternal impressions," because mere fables, or otherwise more readily explained; nevertheless there still remain a large number which cannot be cast aside, and the simplest explanation is that which has been proposed. Of course, those who deny this influence rest their argument chiefly upon the fact that there is no nervous connection between the mother and the child in her womb, no nerve-paths along which impressions may travel from her brain to it. But the first duty of science is to ascertain facts, and not reject them because we do not see how they are caused. It is well-known that mental emotions may cause most injurious changes in the mother's milk, changes which neither the microscopist nor chemist has revealed, and that similar influences may affect the blood. As the fœtus is nourished solely by the mother's

blood, why may not changes in this nutritive material caused by mental influences, modify the structures and parts built up from it? But even independently of this partial explanation, is it not possible, nay, probable, that the soon coming years have as marvelous mysteries in the psychical world waiting revelation as any of the wonderful manifestations of science made in the last half century? One of the greatest poets of ancient times said: "There is a path which no fowl knoweth, and which the vulture's eye hath not seen: the lion's whelps have not trodden it, nor the fierce lion passed it by." Admitting the existence of a spiritual world, there may be many paths which no human eye hath seen.

The extraordinary facts of telepathy, and too many of these have been collected by reliable and reputable observers to be explained away as mere coincidences, seem to render possible the hypothesis that impressions can be instantly conveyed without nerve transmission.

But without proposing any theory as to how impressions upon the mother's mind may affect the fœtus, it is not wise to reject a belief so long and so generally held by the public, and especially, as before stated, commanding the assent of eminent philosophers and physicians.

Admitting, then, this truth, it is of the greatest importance that a woman should during her pregnancy be guarded against all injurious impressions, all mental shocks, all severe trials, all rude disturbances of her mental, her moral, or her emotional nature. More than once it has seemed to me I could read in the sad and gloomy disposition of young man or woman, the reflex of a gloom which hung over the mothers when they bore them within their wombs.

When the artist makes the sunlight his painter the sensitive plate must be

undisturbed, and no object intervene between that which is to be represented and the surface of representation, or the picture is a failure. May not the billions of brain-cells be as sensitive in their formative stage, and impressions then be made which are lasting as time? No one can consider these marvelous mysteries of human creation without reverential awe. Lo, here, as Kingsley has said, is one of the commonest and one of the deepest things in the world, the mystery of mother and child. And whether that child be waiting for the fulness of time, or having completed its days is clasped in her arms of abounding love,

"A mother is a mother still,
The holiest thing alive."

PHYSICIANS AS LEADERS IN SANITARY PROGRESS.

BY HENRY HARTSHORNE, M. D., L. L. D.,
OF PHILADELPHIA.

Preventive medicine is a term which may be used either as synonymous with the whole of Hygiene, or as only including the study of the direct causes of disease and the methods of antagonizing them.

Either way, none are so obviously and necessarily interested in all parts of sanitary science and practical hygiene as physicians. Their studies in physiology and pathology, and more especially in etiology, prepare them for the consideration of everything belonging to health, its enemies and its defences. It would be a strange military system, all of whose operations consisted in awaiting the actual attacks of invaders at the hearthstone, with no outer fortifications or guards to anticipate dangerous approaches. Yet, while the physician confines himself to the treatment of developed maladies, and leaves his patients as soon as they are, for the time, well, this is precisely the nature of his practice.

Selfishness comes in here, and argues

for the doctor: "That is my business, the treatment of disease; that is what I am paid for. It would be a contradiction for me to occupy myself with trying to prevent just what gives all the occasions for my employment."

But selfishness here, as everywhere, is short-sighted. Cannot every physician see what the common intelligence of men discerns, namely, that *somebody* must look after the defences, an ounce of prevention being worth a pound of cure? If not the physician, who else? Shall it be the schoolmaster, or the chairwoman of the "Ladies' Health Protection" Committee? When these find that they can circumvent the medicine-man, and render his avocation unnecessary, the doctor and the druggist together, if they do not have to shut up shop, may have at least not a few idle hours.

Writing prescriptions in latin has been defended, on the idea that we must not let our patients into the secrets of our art. It is at all events not well that they should know more about it, or of the science applied in it, than we do ourselves. Such is really the case when the general public gives more attention to practical hygiene than physicians give to it. As things are going, this may, soon be the case. Sanitarians now constitute a class, including gentlemen and ladies of leisure and of benevolent minds, architects, plumbers, engineers, non-medical managers of hospitals, unprofessional members of boards of health, and physicians. It is true that a certain number of eminent medical men have been and are prominent in the work of the American Public Health Association, and in the State Boards of Health. But, as compared with the whole number of physicians in the United States, these are few.

Again, practitioners of medicine have need to be thoroughly versed in hygiene,

for its uses in the treatment of their patients. Polypharmacy has not yet died out in practice. Outletting by the lancet has (with doubtful gain) given way to the abundant inletting of potent drugs by the hypodermatic needle. But more and more the evidence accumulates and forces recognition, that, if not "the stars in their courses," at least air, water, food, sunlight and other natural agencies as they are dealt with, war either for or against our patients. Hippocrates, the physician, did well to write a hygienic treatise, on "Airs, Waters and Places." He who does not comprehend the right relations of Hygiene to Therapeutics, is only half armed for the conflict with disease, even with the whole of the *Materia Medica* at his fingers' ends.

One cause for the insufficient interest of physicians, so far, in Sanitary Science, has been the general absence of instruction upon Hygiene in the Medical Schools. Until the University of Pennsylvania established a chair of Hygiene, for a three months' course, in 1866, there was, except a less distinctly professional course in Harvard College, nothing of the kind in this country. In hardly any other medical school to-day, in the United States, is there more than a nominal inclusion of Hygiene, under the wing, so to speak, of Physiology.

This ought not so to be, for the reasons that have been above briefly suggested. Hygiene, coming naturally between Physiology and Pathology on the one hand, and Therapeutics on the other, ought to have a full place in every medical curriculum. It should be granted a professorship to itself, in the winter course, with examinations compulsory for every graduate. Only when this is done, and the whole acquaintance of the physician with the subject is no longer postponed till after graduation, then to be picked up as

it may be, here and there, only then will it be possible for the members of the medical profession fully to maintain the place which is theirs of right, that of thoroughly equipped scientific and practical leaders in sanitary progress.

The time may, indeed, and ought, to come, when sanitary counsel may be called for and professionally given, in a manner analogous to that of legal advice, to *prevent* instead of only to remedy disaster. If a careful man has property to bequeath, he consults a lawyer about his will. When he has a house or a farm to sell, or proposes to buy one, a lawyer or conveyancer inspects the title, and sees to the proper and safe conduct of the transaction. So, why should not the family sanitary adviser be consulted about the situation, construction, drainage and ventilation of a proposed new dwelling, to be built or bought?

We may suppose many occasions for family sanitary counsel. For example:

"Doctor, you know our family tendency to consumption. Frederick is now over sixteen; pale and slender, although well. He is not active, and wants to go into a city business college, and then to become a book-keeper. My husband thinks he had better go to Haverford College, where, with his studies, he can play cricket, use the gymnasium, and develop his chest. What do you think about it?"

"Your husband is right. He ought by all means to avoid a sedentary life. No book-keeping for him. Let him go to Haverford, or on a farm; anything to give him the purest air and a good deal of active out-of-door life. Thus he may probably overcome the family predisposition."

Again: "My son, just married, has bought a nice house out of town, which seemed dry enough when he looked at it, but after the first rain he finds the cellar

floor quite damp. His wife is beginning to be rheumatic. Will you look at it?" The doctor visits the house; he finds a sodded bank sloping towards the cellar wall, so that a heavy rainfall pours right in through the sides and bases of the windows, and through the imperfectly cemented wall. The grass bank is at once made to slope the other way; a two-foot wide space is opened between it and the wall; and the latter is well covered with Portland cement. The next rain leaves the cellar floor as dry, almost, as the parlor. So we might go on, but without necessity. Our idea is simply to urge that, with the advance of Medical and Sanitary Science, the proportion between interference and nature, between remedial and preventive action, changes. Yet skill and knowledge will always be required, and should be professionally appreciated and paid for. It will be well for physicians to use their existing opportunities of leadership, so as to be always prepared to give the best sanitary advice where it is needed; for their own reputation, the advantage of their patients, and, last but not least, the general benefit of mankind.

ROUTINE OF A DAY IN THE LIFE OF THE GERMAN EMPEROR.

The following details of the personal life of the Emperor (says a cable correspondent of the *New York Herald*, June 26), have been sent me by a gentleman in a position to be thoroughly informed in court matters. They give such an interesting view of the simplicity of the German Kaiser's life that I send them as received.

The Emperor rises almost as early as the hardest worked of his subjects, namely, between six and seven o'clock. His bedroom shows a soldierly, stern simplicity. The bed in which he has slept nearly seventy years is of ordinary pine,

without carving or other ornamentation.

He sleeps with his head much raised, almost as though he were sitting up. The covering is an eiderdown quilt, but in cold weather the Emperor throws over the quilt the military overcoat he has worn during the day. There is little furniture beyond a high clothes-press. The sole luxury in the room is a big mirror, giving a full length view of the Kaiser. The Emperor has never owned a dressing-gown or pair of slippers. As further evidence of his simple life may be cited the fact that until the attempt on his life, nine years ago, the Emperor dressed himself with scarcely any assistance from servants. Since then a stiffness in one arm caused by powder burns has made a valet necessary.

Over the Kaiser's low bed hangs a bell-rope leading to the servants' apartments below. Between six and seven o'clock, when in health, he wakes of his own accord and rings for his personal attendants. These *Kammerdiener* are men of some education, usually selected by the Emperor from among soldiers. Uckermaerker, their chief, was the Kaiser's attendant at the time of Nobiling's attempt, and jumped from the box seat of the carriage to catch and shelter his master in his arms.

In answer to the bell Uckermaerker and the chief wardrobe servant appear to aid in the Emperor's rapid toilet.

At half-past seven coffee with milk and a single Carlsbad wafer are placed for his majesty in a room off his bedroom.

From eight to ten o'clock the Emperor gives attention to his private business—that is, to all mail matter, which comes to him direct, instead of through the Departments of State; to his private estates and to a multitude of personal appeals.

During these two hours he arranges with Private Secretary Geheimrath Bork that

some peasant who has sent plover's eggs shall be properly thanked, or that some child who wishes to exchange her picture for that of the Kings and the Crown Prince shall duly receive the photographs. This is not specially easy work either, for many grown people give their names without addresses, and children are apt to sign their first names only. Yet, by means of the postmarks and the school-lists, nearly every one finally receives an answer.

Perhaps during this work the Empress has rung to announce that she will receive the Emperor. If so, the Kaiser goes upstairs to pay his morning call. The Emperor, in calling upon the Empress, maintains always a state of spruce new uniform.

During this call the day's programme is arranged, invitations for the evening's dinner are settled and general gossip discussed.

Afterward the Kaiser goes down again to his work-room, at the window of which so many Americans have seen him in uniform, with the Grand Cross of the Hohenzollern family order and the Iron Cross, won in 1813, on his breast.

The Emperor for two hours receives the reports of the departmental chiefs. On alternate days come the civil and military chiefs of the Cabinet, but Friday and Sunday are free. All State documents of any importance require the Emperor's signature, and until within a few years he signed no document without having first mastered its contents. It is easy to see, therefore, in what ceaseless work he has spent his life.

Moreover, for public affairs he has no private secretary, but trusts entirely to the departments of State for such work.

At twelve o'clock come many persons who are daily presented to him. All officers above the grade of major, for

instance, are presented to him on their promotion. A host of civil officials and distinguished persons are also presented, so that he may himself judge of the capacity of all State servants.

About twelve o'clock breakfast is often placed for him on his desk, in the corner of the library nearest his work-room, though, of course, he frequently breakfasts with the Empress.

This desk has broad projecting shelves on the lower half and narrow book covered shelves above. On the broad tabletop of the lower half, the servant places cold meat, bread and a single glass of port wine. Frequently between presentations the Emperor breakfasts hurriedly, often standing, it is said, like an American before a lunch counter. Sometimes he forgets breakfast until reminded by the servant. His spare time between twelve and two o'clock is filled in by the study of new laws, either already before or to come before the Reichstag.

At two o'clock he drives for two hours. There are no guards around the carriage. He formerly drove alone, but since Nobiling's attempt at assassination an adjutant sits with him. When attempts are made to surround him with soldiers, the Emperor takes the greatest delight in eluding his guard by quick changes of route.

Coming home at four o'clock his majesty, of late, sits down in a battered old red chair and sleeps for an hour.

A curious evidence of his sturdy strength is that for fifty years he has never been known to rest on a sofa, so that sofas in his apartments are apt to be used as tables and be covered with books, papers and documents.

At five o'clock comes dinner. If there are no guests dinner is eaten in the Emperor's apartments. Usually, guests have been invited. Then dinner is served in the blue room above, in the Empress'

apartments. Here, on a large, round table, are rare china and silver enough to make up for the simplicity of the Emperor's private life.

Dinner is usually of five courses. Of these, fish, with a sip of wine, and roast, with some light red wine, are the Emperor's favorites. Formerly, like most of Prussia's famous men, he was a heavy eater. Now, however, the difficulty is to make him eat enough to sustain his strength. Wine he has never been very fond of. Fruit he eats with great relish and ends dinner with a small glass of champagne.

At seven o'clock or later the Emperor goes, perhaps, for an act to the opera or theatre. Even here work pursues him, as documents are frequently sent to the opera house for his signature.

In the evening there are often small companies in the Empress' apartments, but the Emperor is not always present. Sometimes he works for an hour or two finishing the day's work. At eleven o'clock his *Kammerdiener* are called to help him to bed. The Emperor when in health is frequently asleep before the last servant is fairly out of the room.

It was said of the Emperor during his late illness that his tireless energy from early to late in carrying out equally the smallest and the most important of his duties, his great tact in discovering and handling men, together with his great kindness in keeping each man in his place, are the Kaiser's strong personal characteristics.

He has laid out the path for all who come in contact with him, from the Empress to his personal attendant. Each must do what is allotted, and must also keep strictly within these limits. With each official, as with each servant, the Kaiser speaks only of the duties of his department. Formerly the Emperor even

opened all his own letters. Now he allows this to be done for him.

Usually the Emperor reads no newspapers, but of late he is much read to. Clippings from newspapers of all nations are sent to him from the Foreign Office, so that in this way he keeps track of the world's news and opinions.

When well, Dr. Von Lauer calls each morning to give him a sort of certificate of health. During his recent serious illness, Dr. Timann slept in the palace each night, and a servant slept in the room next to the Emperor's bedroom, but as soon as the Emperor regained sufficient strength to be out of bed the old routine began again.

RECENT ADVANCES IN PREVENTIVE MEDICINE.*

BY GEO. H. ROHE, M. D., OF BALTIMORE, MD.
Professor of Hygiene in the College of
Physicians and Surgeons.

Progress in any branch of science or art, may be measured either by the number and character of new discoveries made, or by the gradual advances in the application of knowledge previously acquired. Judged by either of these criteria, the record for State Medicine during the past year is a creditable one.

In the field of epidemiology and epidemiology, the progressive extension of the fifth great pandemic of cholera first claims attention. Extinguished in the portions of Italy, France, and Spain, ravaged in 1885 and 1886, it has slowly invaded southeastern Italy, Hungary, and other Austrian possessions, and has been imported into South America, whence it threatens the United States by several

* Abstract of the Address in State Medicine, delivered before the American Medical Association, at the Thirty-third Annual Meeting held at Chicago, Ill., June 7-10, 1887.—From the *Medical and Surgical Reporter*.

outes. The danger of invasion of this country is at present greater than at any time within the past three years.

Yellow fever inoculation, as practiced by Friere in Brazil, and Carmona in Mexico, has claimed a large share of the attention of sanitarians during the year. The claims made in favor of this method of preventing this scourge are now being subjected to an official investigation authorized by the United States government.

Diligent search has been made for the specific organism supposed to be the infective agent in vaccine virus, but without definite success. The results obtained are not entirely negative, however, and one may cherish the hope that a solution of this problem will soon be reached.

The relation of a peculiar disease of cows to scarlet fever, and the discovery of a specific microbe in the blood in the latter disease, have attracted much attention. The restriction of scarlet fever will doubtless be more thoroughly effected as soon as physicians are convinced of its bacterial nature, and clearly comprehend its mode of transmission. Statistics are even showing what has already been accomplished in this field.

Sternberg, Fränkel, and Weichselbaum have studied the specific microbe of lobar pneumonia, which the former regards as identical with his *micrococcus fasteuri*; in which opinion both the other authors mentioned coincide. Dr. Baker, of Michigan, has also shown that lobar pneumonia seems to be dependent upon a cold, dry atmosphere.

Measures for the restriction of pulmonary tuberculosis are adverted to. Tuberculous patients should not be treated in the same hospital wards with non-tuberculous individuals, and prompt disinfection of the sputa and other discharges should be practiced, in order to diminish

opportunities for infection. General sanitary measures should, however, not be neglected in the warfare upon the bacillus. There is danger that a too exclusive attention to the microbial factors of disease will narrow our views of epidemiology and preventive medicine.

It seems to be established that the micro-organism discovered in the intestinal lesions and discharges in typhoid fever is the cause of this disease. The fact that this microbe may preserve its vitality for a considerable time in water and ice has been shown by Bolton, Wolffhügel, Prudden, and others. This, together with the well-known history of outbreaks of this disease undoubtedly depending upon pollution of drinking water, should make prompt measures of disinfection imperative in every case. The physician fails in his duty who neglects measures for the thorough destruction of the typhoid infection existing in the intestinal discharges.

The importance of disinfection of bedding, clothing, and other personal and household articles in contagious diseases, demands that health authorities should have under their control establishments where disinfection can be carried out on a large scale and at public expense. Such institutions are now in use in Berlin, Düsseldorf, Göttingen, Strasburg, Breslau, Leipzig, Danzig, and other cities in Europe. The results are pronounced to be exceedingly beneficial. Steam under pressure is regarded as the best disinfecting agent.

Quarantine, a word which for more than five centuries has been synonymous with barbarism, is becoming under modern methods a safeguard to the public against infection, and an advantage instead of obstruction to commerce. The results achieved at the model quarantine station at New Orleans encourage the hope, and

almost warrant the prediction that the days of the quarantine of detention, whether by sea or land, are past, and that quarantine in future will mean simply *thorough disinfection* of fomites, and, of course, effective isolation of persons already infected.

Cremation of garbage seems to be the best method yet devised for the inoffensive destruction or final disposal of solid city wastes.

The irrigation system of sewage disposal has steadily won favor. In Berlin, Breslau, and Danzig, in Germany, Birmingham in England, and Pullman and other places in this country, it has been in successful operation. Chemical precipitation and purification of sewage has also been adopted with satisfactory results in various German cities. A board of distinguished engineers recently recommended the same system for the city of Providence, R. I.

Professor Vaughan's discovery of a very poisonous ptomaine in cheese, ice cream, and milk undergoing certain chemical changes, has been confirmed by a number of investigators in various parts of the country. Vaughan's suggestion that tyrotoxicon may be found to be the poison which produces cholera infantum, opens up a new field for investigation in which every physician must of necessity be interested.

Analyses of food and drugs made during the year in Massachusetts and New York, show the wide extent to which adulteration is practiced, and how the people are defrauded. Among the most startling instances are olive oil, of which 68 samples out of 91 were spurious. Vinegar was adulterated in 79 samples out of 116; mustard 124 times in 211; white pepper 63 times in 128; black pepper 41 times in 71; mace 29 times in 45. Of nine samples of horseradish

examined, only one was found genuine. A precipitate of uncrystallizable sugar and coloring matter and chloride of tin (poisonous) is sold to candy makers for making confectionery. Citrate of quinine and iron from respectable manufacturers contained $3\frac{1}{2}$ per cent. of quinine, instead of the 12 per cent. demanded by the pharmacopœia. Authority and means should be given to the health authorities to protect the public from these frauds, many of which are sources of danger to life and health.

Statistics collected by the speaker show that five-sixths of the inhabitants of cities in this country have no facilities for bathing, except such as are afforded by a pail and a sponge, or an easily accessible river, lake, or other body of water. The establishment of public baths is urgently recommended both as a sanitary as well as moral measure. Tub or pool baths are objectionable, both on account of expense and lack of privacy in the latter. The spray baths in use in the German and French army barracks are recommended. These are not expensive, either in first cost or administration, and allow each bather absolute privacy and the opportunity for a thorough cleansing in clean water. Public baths should be open the year round, and not only during the summer.

A number of instances are grouped together showing how the enforcement of appropriate sanitary measures has saved life. In Michigan the saving of life from one disease (scarlet fever) has amounted during the last eleven years to 3,718, or 338 per year. In 1886, appropriate sanitary measures saved the lives of 298 persons who would have died of diphtheria if such measures had not been enforced. In England and Wales, the average annual saving of life due to sanitary measures has amounted in the five

years ending 1885, to 62,000. In Baltimore, a marked reduction of deaths from infectious diseases has followed the enforcement of certain sanitary precautions. In Memphis the death-rate has been reduced in six years from 35 per thousand to 23.80 per thousand. In Chicago the reduction in mortality in the last five years has been from 25.69 per thousand to 19.46 per thousand, a net saving of 17,214 lives in that city during that period.

While all advances in sanitary administration have doubtless contributed to produce these good results, the main influence is to be attributed to three factors. These are *compulsory notification of infectious diseases; prompt and effective isolation of the sick and infected, and thorough disinfection of all infected articles and sources of infection.* These must be the watchwords of the practical sanitarian of the future.

WHAT KNOWLEDGE IS OF THE MOST WORTH.*

BY ROWLAND HAINES, OF NORRISTOWN, PA.

"'Tis a consummation devoutly to be wished" that the adoption of a rational system of education by our prominent educators will in the near future forever silence the long-drawn-out controversy upon the comparative value of an exclusive scientific or classical training. If instead of ignorant fashion or the individual preference of those who established the curriculums now in vogue, the criterion of the fitness of any study had been the relative worth of that particular study as a part of a judicious educational course, such a discussion would never have arisen. Herbert Spencer says, that knowledge that treats of the preservation of health yields in importance to

no other whatever; but there are many who differ with him. They believe that man has a higher interest than earthly life, and that the Bible injunction to "Seek first the kingdom of God" should be obeyed. Fortunate it is that in this land of religious liberty, knowledge can be easily acquired in whatever form is most satisfying to the earnest seeker after eternal truth.

But of all secular knowledge hygienic instruction should be placed first. Are not health and longevity man's greatest earthly blessings? While it is vanity to desire to live long and not live well, it is equally certain that there can be little usefulness or true happiness without health. A distinguished sanitarian, Dr. E. A. Wood, says: "We know all about other people, next to nothing of ourselves. We know the size of the sun, the temperature of the moon, and the weight of Saturn. We spend millions to teach our children the geography and the histories of foreign lands; we study the habits of extinct races that gnawed bones in caves, or slept on piles out on lakes; nay, we even teach the very anatomy of the cave men and pile dwellers of antiquity! But how many dollars are spent to teach our children self-knowledge, the kind of knowledge most important?"

In our elementary schools, the geography of countries which many will never see, and the knowledge of which they will soon forget, is taught from a series of graded text books, while one lean primer is sufficient to describe the structure and tell the right and wrong use of that wonderful mechanism that man carries around with him every day of his often too short life. In not a few of our colleges, professors of some dead language are supported for the exclusive benefit of, perhaps, a few students, while such a thing as a professorship in Hygiene is too expensive and

* From the *Swarthmore Phoenix*.

altogether needless. It is true that during the four years of a college course a few lectures may be given on the subject, but these would not afford opportunity for a good outline, much less its proper treatment. The proper study of man would not demand the extinction of the other sciences or of the classics. Man is an animal, and the observations of comparative anatomy, physiology, etc., would be of great use, while the classics would serve as a most valuable hand-maid to the knowledge of ancient civilization. Valuable lessons could yet be learned from the water supply and sanitation of Greek and Roman cities. Besides the necessary instruction, every school and college should support a physician, who should have personal oversight over the health of each individual student. He should see that all the surroundings were sanitary, and that those under his care overtax neither eye nor brain in study, nor heart and lungs in exercise.

The study of man offers the most interesting field for original research, as there is plenty of uncertain data. There could be no higher subject than man's spiritual relation, nor any more philanthropic than preventive science. The names of Pasteur, Koch, and Pettenhofen will be warmly cherished as benefactors of mankind long after their eminently useful services are ended, but

"Oli, rise some other such!
Or all that we have left is empty talk
Of old achievements, and despair of new."

Here is a chance for women who desire to be of as much use as possible to the world. As sanitarians they could prevent far more misery than they can cure with drugs as physicians. Our liberally educated women are wishing to enlarge their sphere of usefulness, while they at the same time overlook a field that is particularly their own, that of dress reform. As soon as women show that they are guided by

reason and not by senseless fashion, they should be allowed to vote, and not before.

Every college should have at least one endowed chair for a Professorship of Hygiene, Hereditary and Sanitary Science, etc.; for those students who patronized such a rational innovation would, by their increased health and usefulness in after life, do more to the credit of their Alma Mater than thousands of dollars spent in any other way.

WALKING.

The exhilarating motion of riding and its utter relaxation are truly pleasant, but he who has not the opportunity to ride can undoubtedly find much to entertain and instruct him even in short rambles. In company with good mother Nature, he will gain pleasure, benefit, and health, if he but try to read the manifold pages of her beautiful volumes; pages on which are written such lessons of truth, and goodness, and beauty, that he who reads them feels refreshed and strengthened for the conflicts of life. Happy is he who has acquired this power of understanding her teachings, as they are written on every leaf and flower that grows.

When one rides, one must necessarily keep to the highways of the world; while on foot one may explore the byways, narrow streets of quaint old cities, shady forest walks, and rugged mountain climbs.

What is more pleasant than on a hot midsummer day, to seek the shady recesses of the woods, and become acquainted with their inmates! The great trees intertwining their branches overhead would give ample employment for an afternoon in finding out their names and uses. Beneath their genial shade, from early spring till frost-bringing fall, may be found the blossoms which give delight to the botanist and artist. Beneath some mossy log

the naturalist will find, perhaps, a snake or slender lizard darting in and out among the lights and shadows. Beside the brook that murmurs so musically through the rocky ravine the angler may wander, reel in hand, while he lures to a sad end the shining trout. From some dark pool, which like a mirror reflects the trees and sky above it, one may drink from leafy cups sweet draughts of nature's best wines. Ah, who would rather ride on the dusty high roads in preference to a quiet ramble in this delicious seclusion? The cool and graceful ferns waving in the gentle breezes, and the chirping and twittering of the busy birds o'erhead, replace tenfold the artificial amusements of man's contriving. Here the sick would find rest, the sorrowful consolation, the wicked repentance, and the good and happy untold enjoyment in the unconscious association with the Maker and Father of all.

Not only in his study of nature, but in his study of human nature, the foot traveler has the advantage. He comes in contact with every phase of life, in his wanderings. At the door of the farmhouse, where he stops for a drink of water from some moss-lined well, he will meet, perhaps, a shy and sun-browned country maiden, or perhaps a talkative matron, who will relate to him all the wonderful stories of the region round about, while he rests and refreshes himself. In some out-of-the-way clearing he may find some queer old character, leading, apart from the world, a strange and lonely life. He may see the sad contrasts between the life of the rich and that of the poor.

Goldsmith, whose writings teem with such a variety of natural characters, walked through France and Holland in his youth, mingling with high and low, learning their thoughts and feelings, to jot down afterwards in his charming books. Who has described better than our own Bayard

Taylor, the life and customs of the people through whose countries he traveled on foot? There is no surer way of getting acquainted with human nature than to meet people on an equal footing.

Students especially, in their long vacations, should lay all books aside, except some of nature's text books, and should seek the woods and fields and mountains, searching for health and pleasure in the swamps and highlands. Thus they will lay a firmer foundation for the next winter's studies, and they will learn, without their knowledge, precious lessons for the hard voyage of life.

FLAVORED CHEAP CIGARS.

A writer in the *Chicago Herald* says: "Nearly every brand of nickel cigars is more or less flavored, but so far as I know nothing injurious is used. The notion that opium or any of its compounds is used is an erroneous one. Almost anything may be used that will please as well as deceive the smokers' taste. Probably the most common flavoring article is valerian root steeped in rum. There are, besides, countless other objects used. Some manufacturers use orange-peel and lemon-peel; rose-water is extensively employed—in fact, most of the flavorings contain that ingredient. Tinctures of opium may be used in very small quantities for higher priced cigars, but opium is too expensive to be recklessly used. There are ingredients used by some cigar makers, especially in Cuba, which it would not do to mention, but if it were generally known, it would lessen the demand for imported cigars. The flavoring is generally poured into the boxes after the cigars are packed, though, for cheap goods the most common way is to sprinkle the mixture over the leaf tobacco."

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Editorial.

ALCOHOLIC AND OPIUM INEBRIETY.

In our next issue we will publish a very interesting article (with illustrative cases) on this subject, from the pen of Dr. Edward C. Mann, of Brooklyn, N. Y.

DR. A. L. HUMMEL.

We take pleasure in announcing that we have associated with our journal, as Managing Editor, Dr. A. L. Hummel, who is so widely and so favorably known to the medical profession.

SANITATION IN JAPAN.

It is with pleasure we announce that we have been promised an illustrated article on "Sanitation in Japan," from the pen of Mr. W. K. Burton, late Senior Engineer to the London Sanitary Protective Association, and now Professor of Sanitary Engineering in the Imperial University of Tokio, Japan. We are confident that we

have in this article a great treat in store for our readers.

THE TENEMENT HOUSES OF NEW YORK.

We take pleasure in announcing that in our next issue we will publish an illustrated article on "The Tenement Houses of New York," from the pen of the distinguished Consulting Sanitary Engineer, Mr. Charles F. Wingate. The article will possess unusual interest as teaching us how the *masses* live in the Metropolis of America. We can promise a rare treat to our readers in this article.

OUR REPORTS.

The food report which we publish in this issue is the beginning of a line of work which we think will prove extremely valuable.

It is our intention to furnish our readers accurate and reliable reports of all articles offered for the consumption and use of the public. The impartiality, accuracy and fairness of these reports, will make them wonderfully and uniquely valuable.

THE IDEAL PHYSICIAN OF THE FUTURE.

There is a world of suggestiveness in the article, by Dr. Hartshorne, which we print elsewhere in this issue. It has always seemed to us that the relation which the physician bears to the public is the most unnatural, and socially and humanely wrong, of that which exists between any other class of persons. Divested of all sentimental, philanthropic or public spirited covering, the naked truth remains that, in view of the present relations, it is to the *material* interest of the physician that the people should be sick. Every sick man, woman or child, means just so

much pecuniary gain to the doctor; and as doctors must pay house rent, must pay for bread, butter and clothing, just as any one else, it cannot be denied that the greater the amount of sickness the greater will be the financial reward of the physician. In plain words this means that the misery of the people is the harvest of the doctor. Is it but human to suppose that since the very livelihood of the physician is dependent upon the sickness of his fellow-creatures, that he would prefer to have more or less ill health in the community in which he resides. When we enunciated this idea at a medical society recently, our views were warmly challenged, and several gentlemen (and ladies too) somewhat indignantly resented the imputation of selfishness, which such a proposition placed upon the profession. But these ladies and gentlemen were physicians in a large city, and the practice of each was yielding an income of from \$5,000 to \$15,000. Of course, our remarks could not apply to such. We were not speaking for the exceptional few, but for the mass, whose professional income yields but little more than an honest living, and, in many cases, not even this. To this latter class, the suggestion we have made, does not mean that they are selfish or avaricious, it means simply "self-preservation," it means that they must live and must pay for the necessities of life, and this means that people must be sick in order that the doctor may get the money to pay for them. While there is no class more noble, more self-sacrificing, more philanthropic, or who do more work for nothing than physicians, yet, at the same time, we can see no valid ground for denial of our argument, that the greater the amount of sickness the larger is the doctor's income, and (to go back to our early proposition) it is therefore directly to the material interest of the physician that the people should be sick.

This false and injurious relation is due to the faulty fact that, from time immemorial, it has been the custom for the people only to consult the physician after they have been attacked by disease, and to pay him for curing them.

Would it not be much better all around if the doctor were regarded as a Sanitary Counsellor, as one to whom the people resort in order that they may preserve, rather than that they may mend their health, after it is perhaps irretrievably broken?

Let us see how such a plan would work from a financial point of view. There are 82,000 physicians in this country, and, roughly speaking, we have 60,000,000 people. This would allow, in round numbers, one physician for every 700 persons. Let us suppose that at the beginning of the year, each person, or the head of each family, would select some doctor as his sanitary and medical advisor for the coming year, and that for each person the doctor should be paid five dollars; thus in the first place, the average income of each doctor would be \$3,500 per year, certainly greater than it is under the present system. This fee would entitle him who paid it to consult the doctor upon all matters relating to the preservation of his health, and should he become ill the physician would attend him without extra charge. Of course, in some cases the doctor would be called upon to do an amount of work out of all proportion to the small fee of five dollars, but in many other cases he would not be called upon at all, so that an average would be struck.

There are many persons who would not avail themselves of this plan, not having sense enough to see that it would be not only better, but also much cheaper for them in the long run; all such could call in the physician, as at present, when taken ill, and pay him for services rendered until such time as bitter experience

would demonstrate to them the wisdom of the previous fee system.

Under this plan the patient would be much more apt to consult the physician at the very beginning of an ailment, rather than to wait, as is now done, until he is irremediably sick; this would not only make it better for the patient but much easier for the doctor, as by nipping the disease in the bud, much less of his time would be consumed than in curing it.

Of course, it would be impossible to say, just how the people would take to such a plan, until it was tried. There are doubtless many thoughtful, frugal, prudent persons, who would at once avail themselves of it, but we imagine that the masses would wait until experience had demonstrated to them that the proposed plan was not only better, but also cheaper than that now in vogue. It might be argued that the popular physician of a neighborhood would secure all the clients, leaving nothing for his less fortunate brethren; but does not the same danger hold good under the present system? One great advantage to the physician under this new system would be, that he would know at the beginning of the year just what his income would be, and he would be much more sure of his money, than under the present system. It would be interesting to have the views of our readers on this subject; and we would, therefore, ask those who approve of our idea, to drop us a postal card to that effect. In a subsequent issue we will publish the views of the profession thus received.

A NEW CORN CULTIVATOR.

—A new style of hose has been imported in which there is a receptacle for each toe. The agricultural papers note this as a new corn cultivator.

Notes and Comments.

THE MILK OF NEW YORK CITY.

The *New York World* is publishing, from week to week, the valuable results of a series of investigations into the quality of the drugs and foods of New York City. In its issue for June 26th it informs us that over one-quarter, or, to be exact, 26.6 per cent., of the samples of milk examined turned out to be fraudulent; that is, watered or skimmed or both. This is probably not the whole extent of the adulteration that really exists among the samples, as Dr. Love points out, because there may be adulteration concealed in the samples which were originally richest in cream, and which could stand some skimming and watering without getting outside the legal requirements. But of the milks deteriorated by tampering, so that their use is prejudicial to the health of infants for the reasons above mentioned, there were actually more than a fourth of the number analyzed.

The law of New York State declares that if "milk be shown to contain more than eighty-eight (88) per centum of water or fluids, or less than twelve per centum of milk solids, which shall contain not less than three per centum of fat, it shall be declared adulterated."

The frauds which effect the deterioration of commercial milk are principally the extraction (skimming) of the fat, in which is included the cream, and the addition of water. Coloring matter is sometimes supplied to conceal the watering, and salt, borax and salicylic acid are occasionally used to preserve old milk from turning sour. There is not much basis for the prevalent idea that chalk and starch are used as adulterants, as such substances would settle of standing and be too easily detected.

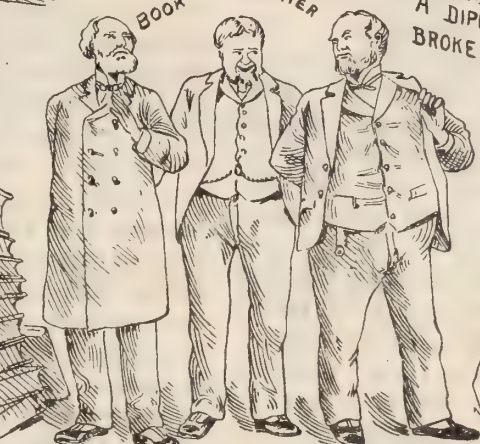


THE FIRST TASK.



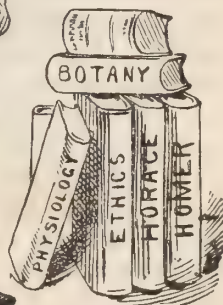
A DIPLOMA AND A
BROKEN DOWN
CONSTITUTION.

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THE ONLY PROTECTION IS THE
STUDY AND PRACTICE OF
HYGIENE

Schöde

POISON FROM THE BAKER'S SHOPS.

The Philadelphia papers, (notably *The Press*) have recently made some startling disclosures going to show that it is a very common practice among the bakers of this city (and we should suppose the same held good elsewhere) to use what is called "egg color," a solution of chromate of lead, instead of the egg itself to give color to their tea buns and other articles. It would seem that Dr. D. D. Stewart has unequivocally traced to lead poisoning from this source, several curious cases of sickness, and it is believed that at least eleven deaths from this cause can be laid at the door of one particular baker. This "egg color" is openly sold by presumably respectable dealers, and what makes it the more reprehensible is that the label on the goods bears the certificate of so eminent a chemist as Dr. Charles M. Cresson, that the "egg color" contains nothing injurious to health. We can only conclude that the manufacturers furnished to Dr. Cresson for analysis, an article from which the lead had been omitted. *The Press* takes the ground that the particular baker, to whom we have referred, is guilty of criminal adulteration, and should be brought to speedy justice. We rather incline to differ with this view and to hold that the baker was ignorant of the mischief he was doing, because it appears that his own family was poisoned by the same article. We cannot excuse him for using any artificial substitute for eggs, but we hardly think that he thoroughly realized what he was doing. For the manufacturers, who must have fully realized the enormity of their nefarious traffic, and who practically admit this knowledge by furnishing a *special* sample to Dr. Cresson, for analysis, we can have only words of strongest condemnation. They should unhesitatingly be

tried for manslaughter at least. An inquiry in this same direction should be started in every locality. It may be stated that besides this chromate of lead coloring there was also found an artificial "egg coloring," made of some vegetable ingredients, not supposed to be especially injurious.

A LAKE POISONED BY A HAIL-STORM.

A most curious phenomenon about Dawho Lake in South Carolina is related by the *New York Herald*. It seems that a dense mass of black gum trees surround the lake on all sides. It is well known that the leaves of these trees are strongly impregnated with tannic acid. It has also been ascertained that the bottom of the lake contains a slight deposit of iron. The poisoning of the water, therefore, is thus explained: The hail-storm filled the lake with bruised leaves and small branches from the trees, the tannic acid emanating from which mingled with the iron and formed tannate of iron, causing the water to turn black as ink and bitter as quinine, and poisoning the fish by thousands.

One species of the fish inhabiting this lake survived the singular disaster, and that was the mud fish, which buried itself in the mud at the bottom, and thus escaped the effects of the poison.

The stench arising from the mass of dead and rotten fish is described as fearful. The thousands of buzzards in taking their departure in the evening for their roosting place after a day's feast are described as making a noise similar to that of an approaching cyclone.

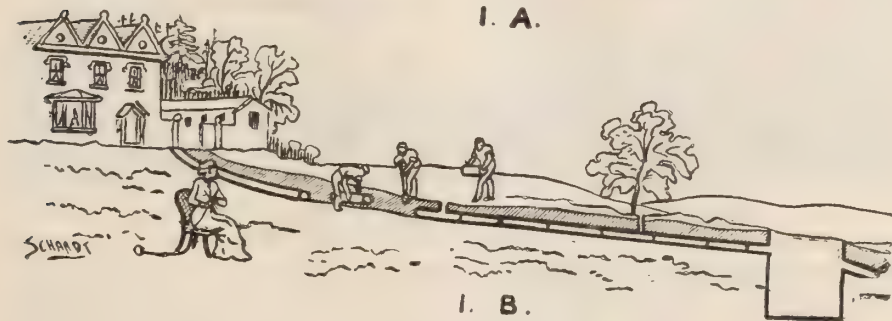
A POINTER FOR BOB INGERSOLL.

By the *Arkansas Gazette* it is said explorer Stanley uses snuff while traveling in very hot regions.

SHOOTING BOX IN THE HIGHLANDS.

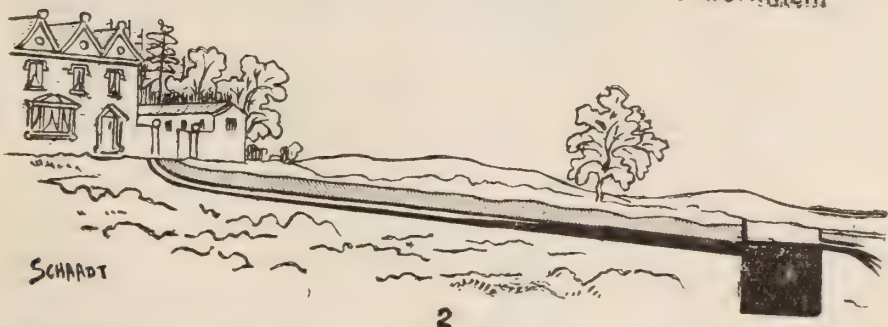


1. A.



1. B.

"One eye for her work, and another for the workmen."



2

The wife of a medical friend of mine preceded her husband to the Highlands that she might set in order the shooting lodge before the arrival of her husband and his guests. Being well informed in sanitary requirements and deficiencies, she did not take it for granted that her orders had been strictly carried out, that the drainage should be put in perfect order.

That she might test the main drain, she posted herself at the empty cesspool, whilst her daughter, stationed at the house, gave a signal, when several buckets of water were poured into the drain; after long waiting some dribbles of water reached the cesspool, not through the drain, but through chinks in the side of the cesspool.

Inference. Drains must be blocked.

Workmen came, found the drain RUNNING UP-HILL AND BLOCKED BY ROOTS OF WILLOW TREE. (1. A.) The drain was relaid with a proper fall (1. B.) The pipes were jointed in cement instead of clay, in order to shut out willow roots and such like intruders, and five openings to the surface were provided in order to secure ample ventilation of the pipes. The lady meanwhile sat by KNITTING and WATCHING the whole of the work.

Figure 2 is drawn, in error, too much like the other two. It is intended, however, to represent a separate drain from the laundry to a separate cesspool. A fortnight after the assembling of the visitors, a stench was complained of by the laundry maids. On investigation it was found that the pipe by which the laundry cesspool overflowed was at a higher level than the pipe through which the cesspool was filled, the result being that before any overflow could take place the level of fluid in the cesspool must rise above the inlet pipe and close it to all escape of air and sewer gas.

The evil was corrected: firstly, by making the outlet pipe of the cesspool lower than the inlet. Secondly, by making ventilating openings into the drain at various points.—(From *Tade's "Dangers to Health."*)

HOW YOUNG COSSACKS ARE TRAINED.

A Russian letter to the *London Times* says that: "A splendid idea was given of what the hardy Cossack race really is by two whole regiments, or twelve sotnias, of boys, about 1,400 strong, from nine years old up to fourteen, drawn for the occasion from all the *stanitsas* or settlements of the Cossacks territory. Mounted on lean, shaggy native horses and wielding huge swords, bigger than themselves, and lances eight feet long, they formed the most wonderful infant calvary ever seen. These boys can already ride at a headlong pace, cling on their stirrups like monkeys, and pick up handkerchiefs from the ground as they careen along. His imperial majesty, who arrived at the saluting point at 10 o'clock amidst tremendous cheering, was greatly interested and amused by these Cossack youngsters as they rode by in lines of sotnias two deep, headed by their chorus, singing Cossack songs to the beat of tambourines. Their swords and lances were found rather too unwieldy for such children, so they were taken away just before the ride past."

THE SANITARY CONDITION OF ATLANTIC CITY.

The Mayor of Atlantic City, N. J., speaks in the highest terms of its sanitary condition. He says that nearly all the new houses, including private cottages, have availed themselves of the privilege of making sewerage attachments and putting in lateral pipes. As far as the city mains are concerned the terra cotta pipe that crushed and gave annoyance has been replaced with iron in the main sewers. A number of manholes have also been constructed for the purpose of expediting work in case of a choking of the pipes stopping the flow of water. They made

the mistake some years ago, down at Atlantic, of using terra cotta pipes for sewers. At the time, we predicted just what has happened; that they would break, and the soil would be saturated with sewage. We will venture the same prediction for any town that is foolish enough to employ terra cotta pipes for sewers; yet at the same time, we have to record the regrettable fact that on one of our main thoroughfares (Chestnut St.) such a sewer is being now constructed.

LIKE SARDINES IN A BOX.

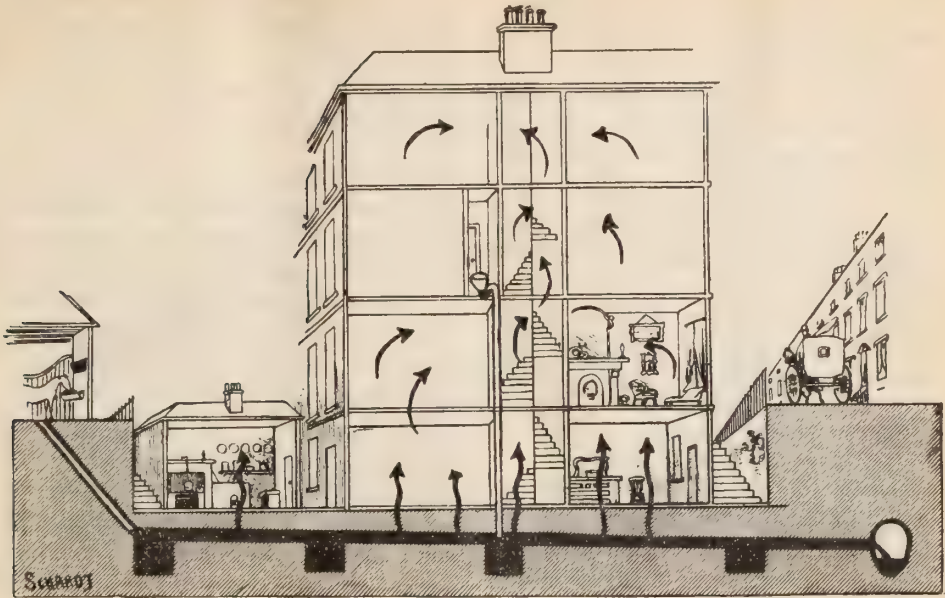
The *New York Herald* is authority for the statement that the French Steamer Chandernagor, recently arrived at New York, from Naples, with 1193 steerage passengers, while according to the rules of the port of New York, her measurements would allow her to carry not more than 965.

More than a score of the poor immigrants made affidavit that their food was insufficient, their drinking water foul, and that they were crowded together like pigs in a pen.

On the complaint of Superintendent Jackson, the captain was arrested, and gave bail in the United States Court. A civil suit against the vessel for \$25,000 was instituted in the same court. It was held by the consignees of the steamer that she was loaded in exact accordance with the rules of the port from which she sailed; this question will be investigated, and if it is found that she had not allowed 100 cubic feet of space to each passenger, as provided for by law, another complaint will be entered against her.

AN ARGUMENT AGAINST FEMALE SUFFRAGE.

One danger of female suffrage is that women may want the men to bet them \$50 bonnets against \$6 hats on the result.



CESSPOOLS UNDER LONDON HOUSES.

A London physician contributed the sketch from which this drawing is made. On investigating the sanitary arrangements of his house, he found *no less than five cesspools* and their connecting drains under the basement of his house. The w. c. was in the centre of the house, joining one of the cesspools in the cellar. On showing the sketch to another physician, neighbor to the friend who supplied this fact, he told me that he discovered the very same arrangement of cesspools in his own house.

A lady friend, writing from London, says:—"In many parts of London the old cesspools still exist, and are only discovered by falling in. These were never fairly done away with when the new system of drainage was introduced. In Edinburgh numbers of the houses still have cesspools, which are never emptied until a blockage takes place, or sickness breaks out. My youthful recollections of Edinburgh in my father's hand—some house, most beautifully situated, recall a basement which must have been flooded with sewage. I now know that the drainage of the house went into a cesspool which no one ever inquired into, and which never was emptied during the whole of my youth. We were always having fevers, but it was accepted as a thing natural to youth. These reflections are dreadful.

"When a house in Mayfair was being done up about four years ago, the men were digging at the foundations, when they suddenly broke into a horrible pit, the effluvia from which sent them flying in all directions. "It was then found to have been a pit into which cattle had been thrown during a murrain when Mayfair was a large farm."—(From Teale's "Dangers to Health.")

THE EVILS OF ADULTERATION.

In the course of an editorial comment on the use of artificial "egg color," (noted elsewhere), *The Press* of this city, thus graphically portrays the evils of adulteration:

"The most dangerous adulteration of the day is to be found not in these instances where the purchaser is cheated in strength or in quantity, but in the line on which our exposure to-day sheds light. A child sleeps, nowadays, in a room whose wall-paper with arsenic pattern renders the air deadly and whose window curtains of lead and arsenic dye load the

passing breeze with death; the flushed and feverish sufferer wakes to draw on brown and yellow stockings, dangerous with picric dyes, puts on a hat whose inner leather lining has been bleached by a cheap but noxious process, hugs a wax doll whose complexion has been colored by another soluble and dangerous dye, drinks a glass of milk which impure water has deprived of a fifth of its natural strength and has charged with the germs of disease, slips a bun into the lunch basket in which chromate of lead has been stirred by the economical baker, starts for school sucking a stick of pistache candy which owes its tint

to Scheele's green, is treated by a school-mate to an ice-cream colored by another preparation of arsenic, and when the unfortunate victim of these daily dangers, sown thick in the path of a civilized child, succumbs to their manifold poisons, the parents mourn over the obscure providences of God which remove from among us the young in all the opening vigor of childhood.

This is no imaginative sketch. Report and analysis could be quoted for each specification."

THE DRUGS OF NEW YORK.

The *New York World* has been recently conducting a series of analyses from which it deduces the conclusion that nearly forty per cent. of the drugs sold in New York city were below the standard required by the Pharmacopœia.

"In a few cases drugs were found to be of an inferior quality, notably ipecac., in which the medicinal portion of the drug had entirely disappeared; senna, which contained decayed leaves possessing no value; gentian, long kept and wormeaten, taraxacum, aconite and rhubarb, inferior specimens when gathered.

"The most important adulteration discovered was in the tinctures of nux vomica and opium—articles over which the retail druggist has absolute control. In the matter of crude drugs he is often at the mercy of the wholesaler, but in pharmaceutical preparations like the above he, and he only, is accountable for whatever deficiency may exist. He can purchase powdered opium and powdered nux vomica of unquestionable value, and, in the case of the former at least, samples which have previously been assayed and have their alkaloidal strength printed on the label. From these, by following the directions of the Pharmacopœia, he can

readily produce tinctures which shall absolutely correspond to the official requirements."

NANTUCKET MEDICINES.

"You ain't sick," said a Nantucketer to a hypochondriacal visitor. "You only think you are. At least, you're thinking too much of what little does ail you. I know what you want. You see that old horse and trap of mine? You want to get into that wagon and drive that horse over to Madequet. You'll have something else to do than think of the complaints the doctors have laid out for you when you drive that horse. When you get over to Madequet you'll find a shanty of mine there and some fish poles and lines. You'll find a pond also. Go and fish in it. Then come back to Nantucket. Here's the keys. There's the trap. Go! Git!"

The wealthy invalid looked a surprised look and hesitated and hummed and hawed a while, and finally put on a spurt of resolution and said, "I'll do it."

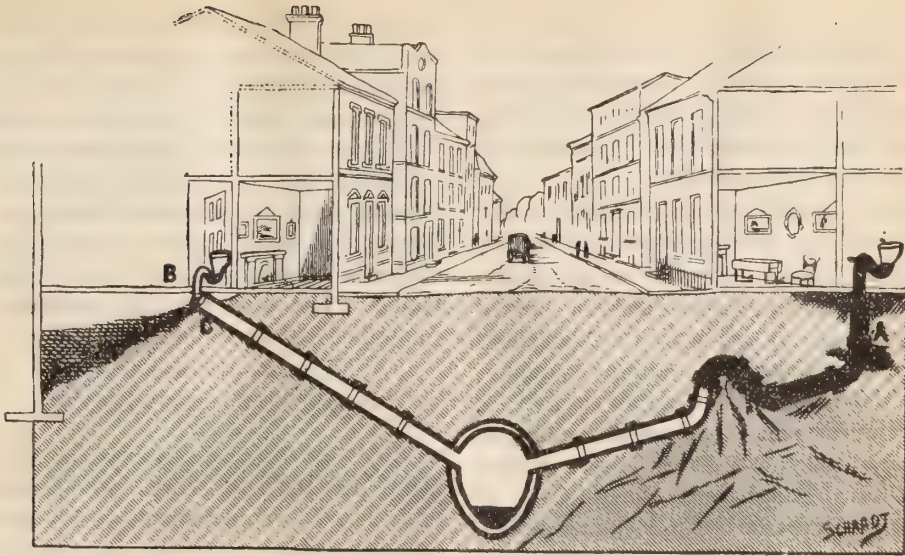
And he did it.

He came back that evening delighted. He had a string of fish, a flush of color on his face, his trousers were torn and wet and there were four inches less of whip lash than when he started.

"He wanted," said the Nantucketer who told me this story and still owns and runs the old horse, "he wanted, besides the air which this island can give, something to get his brains off the track of the complaints which his doctor had loaded him with."

PRESIDENT CLEVELAND'S HEALTH.

At a recent White House reception, says the *Baltimore American*, the wife of a Georgia politician said to Mr. Cleveland:



(FROM TEALE'S "DANGERS TO HEALTH.")

(A) Drain making the best of a rock.

The w. c. drain (A) is blocked as far as a rise in the drain, which was carried by curved tubes over the rock in order to avoid the trouble and expense of cutting through the rock. The fact expressed by this drawing, which looks like a caricature, was related to me by the landlord for whom the houses were built. Several builders who have seen the picture, have told me that they have seen drains so (mis) laid, and I know of one house in which this has been discovered to be the cause of obstructed drains since the publication of my lecture.

Since the publication of this plate I have been told, on many occasion by *eye witnesses* of the not unfrequent occurrence of this piece of rascality.

(B) W. C. discharging into the basement of a house.

The soil-pipe (B) missing the drain-pipe (C) had discharged the whole of the sewage, into a triangular space below the ground floor. This went on for several months before the discovery of the defect was made, during which time "they never had the doctor out of the house."

"Mr. President, it was my good fortune to attend your reception one year ago, and it gives me great pleasure to attend another to-day. I congratulate you on your successful administration and good fortune, and assure you that Georgia is for you. The people of Georgia are with you, and it is my earnest wish to see you here for another term." The President replied:

"I am most happy to have you attend another of my receptions. I am profoundly thankful for your kind and encouraging words, and grateful to the people of Georgia for their support, but I am afraid that I will never see the end of my present term."

These words were not spoken jestingly, but apparently, in dead, sober earnest.

There was not the glimmer of a joke about them—as far as could be seen—and the President walked away as the few listeners who remained looked in each other's faces, as if seeking some interpretation of his ominous words. What did the President mean? Perhaps he referred to the dragging of time, when he is anxious to be relieved from the responsibilities of his office.

SUNDAY HOSPITALITY FORBIDDEN.

Our recent legislature enacted a very important law in favor of temperance, known as "The High License Bill." During its various amendments, before its final passage, a very curious clause dropped into the bill. As finally passed it reads

so as to make you a law-breaker if you ask a friend to dinner on Sunday and give him a glass of claret. Moreover, it makes you liable to fine and imprisonment (both, not either) for extending such hospitality. Just look at the provision:

That it shall not be lawful for any person, with or without license, to furnish by sale, gift or otherwise to any person any spirituous, vinous, malt or brewed liquors on any day upon which elections are now or hereafter may be required to be held; nor on Sunday, nor at any time to a minor or a person of known intemperate habits, or a person visibly affected by intoxicating drink, either for his or her use, or for the use of any other person.

The penalty is a fine of not less than \$50 or more than \$500 and imprisonment of not less than twenty nor more than ninety days.

Of course, it was not intended to make such a restriction as this, and its constitutionality will certainly be questioned.

DE LESSEPS' UNHEALTHY DITCH.

The *New York Herald* publishes an interview with a recently returned official of the Panama Canal Company, from which a terrible picture of the unhealthfulness of the locality is drawn. The Chagres fever is the bane of the locality, and while there is good hospital accommodation for those who can afford to pay for it, the poorer classes lie down and die where and when the fatal fever strikes them. They die like dogs and are dumped into any stray hole and a small amount of earth thrown over them. The secret of the existence of such a state of affairs is plain. For every laborer sent to the hospital the contractor in whose employ he is must pay \$2.50 per day. Very naturally the contractors will not spend the money. Who can blame them? It would ruin them to do so, seeing the

amount of sickness which prevails. Employés of the canal pay \$5.00 a day for hospital accommodation. At Bas Obispo, with a population of 1,000, the daily death-rate is five or six, and it sometimes reaches as high as twenty. Of course Chagres fever is the main illness, but besides that, at this moment there is an epidemic of small-pox and yellow fever raging. Just now the rainy season is coming on and the outlook is terrible.

UNHEALTHY POST-OFFICES.

The *New York Tribune* makes complaint that the New York post-office is filthy and illy ventilated and we can bear personal evidence to the same condition of the Philadelphia office. The odor that greets one upon entering the latter building is strongly suggestive of the filthiest of filth and its dire possible consequences. It is an outrageous shame that the plans of the architects are not submitted to sanitary experts that proper ventilation may be secured, and that soap and water are not liberally used in these buildings to which the daily coming crowds bring all manner of filth.

MR. CORCORAN'S SIMPLE HABITS.

The venerable philanthropist of Washington, Mr. W. W. Corcoran, is extremely simple in his habits of life, and it is no doubt owing, in great measure, to this fact that he is now enjoying very fine health at his great age of considerably more than eighty years. He has gone to the bank in the morning for a couple of hours, during which he was always closeted with his confidential secretary, Mr. Anthony Hyde, who has served him for thirty-nine years. Then he would ride out, call at the Louise Home or visit friends until dinner time, usually also dropping into the Art Gallery for a few

moments. After dinner he would perhaps play a few games of backgammon with one of his grandchildren, and then he would take up whist. Some of his connections were invited every evening to make the whist party, which, if no callers interrupted, would usually last until about 10 o'clock. Then he would call his man, Michael, and tell him it was time to retire.

DRY EARTH CLOSETS.

We believe it would be for the general good of the community were the Dry Earth System and its many advantages better understood. Hundreds of thousands of people in this country suffer inconvenience and annoyance that they would only be too glad to obviate if they knew how. In the absence of sewers, or water works, they take it as a matter of fact that they have to resort to the abominable, disease-breeding privy-vault or cesspool, even at the risk of polluted wells, impure air, and an attack of typhoid, diphtheria, or other preventable diseases. Few people know that they can have all the comfort and the convenience of the best water-closets by using Earth Closets. The Heap's Patent Earth Closet Co., Muskegon, Mich., have just issued an illustrated catalogue, 48 pages, which is very complete and we believe the most perfect on Earth Closets ever published. If any of our readers are troubled as to the disposing of their sewerage, they should write for a catalogue.

SANITARY LAWS OF OCEAN GROVE.

Ocean Grove is a sea-coast resort in New Jersey, owned and operated by a religious association, and we learn that the Ocean Grove Camp-meeting Association has this year issued a special code of laws.

It provides that no person shall manufacture, have or sell any article of food or drink which is adulterated, under penalty of \$50. It prohibits persons from selling or delivering milk without a permit, and from selling watered or adulterated milk, under a fine of \$20. Certificates of every marriage solemnized must be transmitted to the Board of Health within ten days thereafter, and the board must also be notified of all deaths.

There are also salutary laws for ventilation and drainage and the renting of houses. Health inspectors will be appointed to aid in carrying out the rules.

EMPEROR WILLIAM'S DAILY LIFE.

Probably many people think that an Emperor's life must be an easy one. The story which we quote from the *Herald* shows that the Emperor of Germany gets his food, clothes and shelter by working hard for them.

Rising between six and seven o'clock every morning from his plain pine bedstead, the Emperor, although more than ninety years old, has an almost continuous day of work until nightfall. Thereafter he takes his pleasure in the quiet fashion favored by all steady going German burghers, and drops asleep about eleven o'clock.

The chief interest in such details of a great man's daily habits—except to mere hero worshippers—lies in the fact that they reveal character. The method, the promptness, the simplicity, the personal oversight here shown have all contributed their quota toward making William I. the greatest ruler of modern times.

THE CONFESSION OF A MILK-MAN.

The experiences of "An Ex-Milk-Carrier," as given in one of the papers recently ought to prove of the greatest

interest to every householder. He stated that he engaged himself as carrier to a large firm, supposed to keep 300 cows. Before starting on his round in the morning a certain quantity of milk was measured out to him and entered against him in a book. On his return he had to account for more than the quantity served out; for it was, he states, the practice of the firm to require their carriers to "book over." For instance, if he received sixty quarts, he would be required to "book in" sixty-six, and he explains with charming brevity that in order to carry out his instructions "You may either water the milk or give short measure."

MAINE LINIMENT.

I was at the house of a friend who had just returned from Maine, (says a writer in *The Critic*, and I noticed a bottle labeled "Liniment" standing on her sideboard. What have you been using liniment for? I asked. She laughed a musical laugh and proceeded to explain. "That," said she, "is alcohol for my spirit lamp. I wanted to make a pot of tea last week in Brunswick, Me., and found I had no alcohol for my lamp, so I sent my maid out to the nearest drug store to get some. She returned bearing that bottle marked as you see, and the druggist told her that he had put poison in it. He hoped that I wouldn't mind, it was just as good for burning, and unless he did that, and called it liniment, he could be arrested." As my friend did not want to drink it, it answered her purpose.

THE PURE WINE ACT.

The Pure Wine act is being violently attacked by the dealers in California wine, says the *New York Tribune*. The dealers issued a circular recently warning wine makers that in buying wine hereafter they

should exact in addition to the stamp required by the new law, an analysis of wine for which the wine maker would have to pay. This they declared was their only guarantee that what was sold to them was pure. The wine makers were naturally indignant at this arbitrary order, for which there is no good reason, and desired a conference with the dealers. The latter refused to meet them, but a conference will probably take place. The men who make honest wine are not opposed to the new law. The main complaint came from the adulterators and bottlers in New York City, who see their former profits about to end.

POISONED BY CANNED SALMON.

Five persons have been recently seriously poisoned in this city by eating canned salmon. Now, the whole truth of the matter is that it is a dangerous thing to eat canned goods of any description. It was never intended by Almighty God that his creatures should derive their sustenance from birds, fishes or vegetables that had been *doctored* and sealed up in cans for weeks, months or even years. Canned goods have been made almost a necessity of an artificial civilization, but they are not essential to true living. Past generations did not know them and they enjoyed the pleasures of the table just as much as we do. The rational thing to do is to eat everything in season, but not to endeavor to force nature to supply goods at a time when she does not intend us to eat them, by packing a mass of possibly *spoiled* goods into tin cans and storing it away for an indefinite period.

EX-SECRETARY MANNING.

A few weeks ago the newspapers chronicled the fact that Mr. Manning had returned from Europe entirely restored to

health, and would at once enter actively into business affairs. Now we do not wish to be croakers, but we consider it extremely questionable whether a middle-aged man, who has had a simon-pure stroke of apoplexy, can ever be considered as completely restored to health. Of course, we hold that such a man may go on living indefinitely, so to speak, as long as he is cautious; but we very much doubt whether it is wise for a man whose cerebral blood vessels are weakened by organic change, to take upon himself any great amount of brain work. We pen these few words for the benefit of those who may find themselves in a similar condition to that of Mr. Manning.

HEBREW FRESH-AIR EXCURSIONS.

The officers and managers of the Sanitarium for Hebrew Children of New York city ask for funds with which to carry on this year the excursions given for the benefit of poor and sick Jewish mothers and children. This work has been going on for nine years. Seven excursions were given last summer, on which 5,489 infants, 1,533 adults, and 3,188 mothers were given a sail down the Bay or up the Hudson or Long Island Sound and two substantial meals, at a cost of only \$2,225. They desire this year to increase the number of excursions as greatly as possible. Contributions may be sent to Nathan Lewis, President, 318 Broadway; Hezekiah Kohn, Treasurer, 722 Broadway, and to Joseph Davis, Secretary, 124 East Fourteenth street.

NOT ENOUGH HOLIDAYS.

"We now have six legal holidays in Pennsylvania—just four too many," says *The Times*; "and it is proposed to add a baker's dozen of legal half holidays on Saturdays, between the 15th of June and

the 15th of September. It would be a mistake to do so. It would result either in the practical non-observance of the half-holidays in most rural occupations, or it would be needlessly oppressive upon many employers and employed." *The Times* is such an admirable paper that we dislike to differ with it, but, in this instance we must. We have not near enough holidays; we work altogether too much. We must educate the people to the value of recreation from hard work, and they will be ready to obey such laws. "All work and no play," you know, "makes Jack a dull boy."

BERNHARDT NEVER WEARS CORSETS.

Bernhardt never had a corset. She has never fastened a pair of stays around her in her life, which accounts for her suppleness and inimitable grace. For one reason she has always been so thin that there has been no need for corsets to confine her into a size small enough for her gowns. When she goes to the dressmaker she wears a smooth, but not tight waist of heavy white linen, which the dressmaker fills out in hollow places with a few folds of cotton batting fitting the waist of the gown over it. But this is only worn for smoothness and not to reduce her waist. On the stage she does not wear even that, which accounts for her long, smooth strides and the ease of her poses, that rather melt and dissolve into each other than change.

OPEN SALE OF LIQUOR IN MAINE.

The *Augusta (Me.) Journal* says, that an Augusta liquor seller is freely selling the intoxicant at his shop and making no bones of it. The liquor, consisting of whisky and ale, is imported direct from England twelve pint bottles in a case.

He recently went to that country and made arrangements for importations. It comes to the Portland Custom House, whence it is forwarded to Augusta as wanted. The boxes are placed in the window of the shop, duly labeled "whisky," and resting on one of them is one of the bottles, empty. He now has over 1,000 cases on the way to Augusta. The law is such that liquor in unbroken imported packages can be sold with impunity. The minute the package is opened, however, the owner is liable.

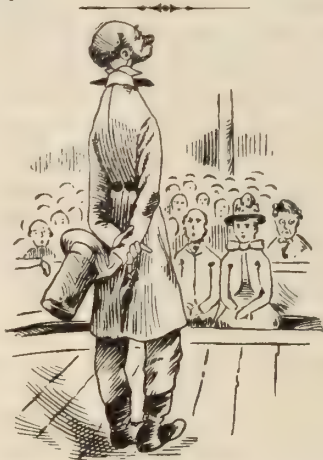
FEMALE CANOEISTS.

We are pleased to note from the *New York World*, that the canoe is becoming femininely fashionable on the waters of the Hudson. The young ladies, with male escorts, are making the trip from New York to Albany in canoes, camping out or frequenting hotels at night. They wear blue flannel dresses, made all in one piece, with a blouse waist and no drapery, weighing just one pound and a half. The skirt reaches to the tops of a pair of extra high boots. A photographic outfit is an important part of the luggage. This is a step in the right direction and gives hopes and encouragement for the physical welfare of future generations of whom these fair canoeists are destined to be the *mothers*.

THE HALF-HOLIDAY GROWS IN FAVOR.

The Saturday half holiday movement continues to gain ground all over the country. On one Saturday recently in New York City nearly 200,000 persons observed the law. The members of the Half-Holiday Committee are endeavoring to get employers to change the pay day from Saturday to some day earlier in the week. Until this desirable change is made, they say, it will be difficult to get

the large retail stores to adopt the early closing system. Several firms have already begun to pay off early in the week, and the committee is hopeful that a sufficient number will follow their example to make the reform general throughout the city.



AWFUL EXAMPLE.—Yes, gentlemen, I am a reformed man!

LADY.—Good heavens! what must he have looked like before he reformed.

THE SMALL BOY GAVE THE CHINAMAN A HEADACHE.

A small boy seeing two Chinese looking in a shop window slipped up behind them and tied their cues together. When they learned what had happened they rushed after their tormentor, who stood grinning from behind a telegraph pole, but as they took opposite sides of the pole in passing they were brought up with a jerk that threw them down, and it was not until the services of a police officer had been secured that they could take their several ways amid an amused throng of spectators.

FAIRY-LIKE FLORIDA WOMEN.

"Who said Polk County, Florida, is a sickly country—a graveyard?" (asks the *Fort Meade Pioneer*.) "Let him read the following and take down his Hernando County land-agency sign and come to

Homeland a-courtin'. Of a dozen Homeland young ladies, including two married women, eight of them tip the scales as follows: 205, 201, 178, 163, 153, 149, 145, 140 pounds avoirdupois, while four of them are so 'fat' that they are ashamed to be weighed. When it is taken into consideration that this is the puny season of the year in South Florida, we think the above a good showing for a small village. The Homeland girls are pretty in proportion to weight, too, young man."

A FLORIDA HEALTH OFFICER.

We publish the following from the *Jacksonville (Fla.) Times-Union* of June 10th, that it may be authoritatively contradicted, for we cannot believe that it is correct. "A prominent gentleman from Lake Worth arrived in the city yesterday. Before leaving here he supplied himself with the proper certificate of health. He said to a gentleman here yesterday that before reaching Enterprise the train was stopped and a negro stalked through demanding the health certificates; that he purposely held his certificate out upside down, when the negro took a glance at it and pronounced it all right. He was evidently too ignorant to know whether it was being held upside down or not."

THE BEST THE HOUSE AFFORDED.

Governor Seward used to tell a story about Governor Draper, who was dining one day at the Congress Hall Hotel, where the butter happened to be particularly rank. "Here, John," said Draper, to a favorite waiter who was standing behind him, "John, take this butter away some people like their butter stronger than others." John took the plate, held it up to his nose a moment with the air of a connoisseur, then put it back again

in its place and observed in a firm voice: "Misther Draper, that is the strongest butter in the house."

THE PECULIAR PENDEL TUMOR.

There will shortly leave St. Petersburg a special medical commission, under Dr. Rapschewski, appointed to inquire into the cause of a peculiar disease known as the Pendel tumor, which has been prevalent for several years among the Russian troops in the Transcasian territory. Gen. Komaroff's troops in the Murghab Valley suffered especially from the ailment, which since the Summer of 1884 has attacked 90 per cent. of his men, rendering many of them unfit for service for several months. The doctors are meanwhile inclined to believe that *bacteria* occasion the disease, but in any case a commission has now been appointed to investigate its nature.

CARELESS DIRECTIONS FOR A WATER TEST.

At a recent meeting of the Philadelphia Board of Health it was resolved that the agents of S. Maw, Son & Thompson, be notified that the so-called pure water test now upon the market is dangerous by reason of careless directions for its use. The test contains a poison, and under the head of directions for use is the following: "Pour a wine glass full of water to be tested into the tumbler, then by a smart blow break the bulb at the end of the crusher. If the water remains perfectly clear, it may be drunk with safety." The person drinking it would take a poisonous dose of iodide of mercury.

FASHION FAVORS HYGIENE.

But a few short years ago the most of fashion's dictates were opposed to the health of the individual. Gradually we

find that good, common sense is growing to reign supreme, as one evidence of which we note in the correspondence from a famous sea-side resort, that society will not dance so much this year as formerly, in fact the pendulum has been swinging the other way for several seasons. There was a time when about everybody danced. Hops were as common as sailing parties are now. But the fashion is undergoing a subsidence, destined to relegate the bewitching waltz and stately figure dance to the historical page of fashion's follies.

THE BEAUTY IN THE TURKISH BATH.

It is becoming quite the thing in New York, according to the *Cincinnati Inquirer*, for the fashionable young ladies after dancing the better part of the night to resort to the Turkish bath establishment, where, after undergoing the process of sweating, kneading, shampooing and the shower bath, they sleep for a couple of hours and reach home in time for breakfast, declaring that they feel none the worse for their night's dissipation. This is like giving the spur to the jaded horse; they are refreshed by the bath, but their vital organs are unquestionably suffering for want of proper rest.

FINED FOR ADULTERATING CHEESE.

A creamery in this State was recently fined \$100 for using a neutral oil in the manufacture of cheese. This is the penalty provided by the prohibitory statute now in force. In this particular instance the claim was not that the creamery was in any way adulterating their butter product, but that they were introducing a neutral into the cheese manufactured. This fact was not directly denied by the

officers of the creamery, who apparently were not aware that their course was illegal, but as they were clearly violating the law the decision of the Justice was as noted.

A BATH UNDER DIFFICULTIES.

While about to take my bath in Olsu at the hotel and, (says a writer from Japan) when just touching the tips of my toes to the boiling hot water prepared for me, the whole family—father, mother, and three daughters—came to wish me a pleasant bath. Before I thought I ducked under the water, but I stood it till they left, although it did seem as though they would never cease bowing and paying compliments, all of which I returned, enveloped like some of the people in Fox's "Book of Martyrs" in a blinding steam. They did go at last, and I jumped out as red as a lobster, and I feel red even now.



STUTTERING CUSTOMER in search of hippurate of sodium—"Hip-hip—"

DRUG CLERK, who is a member of a boat club, and thinks his interlocutor is trying to raise a cheer—"Hurrah!"—*Fliegende Blätter*.

ONE CAUSE OF SICKNESS.

The figures show that the people of this country use about \$22,000,000 worth of patent medicines a year. This explains a good deal of sickness.

POISONED BY A MAD COW'S MILK.

Residents of Mariners' Harbor, N. Y., complain that a druggist of that place, sold them milk from a cow which had been bitten by a mad dog, and that the cow showed every symptom of hydrophobia. The druggist bought the cow to experiment with for a scientific purpose. One man claims to have been made very sick by the milk. Soon after the neighbors began to complain of the milk the cow disappeared and was found buried in the yard of the druggist's father-in-law.

DR. GERMER'S PRIZE BAG.

Dr. E. W. Germer, Health Officer of Erie, who always has his weather eye open for whatever is detrimental to the health or safety of citizens, reports that the tempting little prize bag of popcorn labeled "The Wonderful Prize Bag" is a most dangerous package for children. The bags have pins and fish-hooks in for prizes, and falling into the hands of small children are extremely dangerous.

LONGEVITY OF SUPREME JUSTICES.

The longevity of the Justices of the Supreme Court of the United States, notwithstanding their severe labor, is strikingly illustrated by the fact that, since the organization of the Court, now ninety-eight years ago, only forty-three persons have been members of this Court, and far the larger of them have lived to an advanced age.

WHEN A MAN IS OLD.

A scientific writer says that a man is young from twenty to forty. This may be true in some Arcadian communities, but the average city youth in the United States is an old man at nineteen.

CHAS. O'CONNOR WENT THERE
TO DIE AND LIVED TILL
HE WILLED NOT TO.

Charles O'Connor came here to Nantucket at the point of death, wherever that is, (says an enthusiastic admirer of the place) and lived three years longer than any one expected. A week before he died he told a confidential friend that he could live longer if he wanted to. "But I don't want to," said the old man. "I'm worn out, and it's only a misery for me to carry my body. It's my will that's kept my body alive for the last ten years, and could keep it alive for years to come. But for what?"



The Proof of Darwinism.—Evolution from the Original Rib.

A CONUNDRUM FOR ANARCHISTS.

"Why haven't I a 600-acre farm as well as that man riding by in his carriage?" yelled a red-nosed Anarchist orator, as he glared at the crowd.

"Because he saved \$600 and bought his farm when it cost him \$1 an acre, and you poured your \$600 down your throat!" responded a man on the back seat, and the orator asked no more conundrums.

LIMIT THE INPUT.

Kentucky liquor men have decided to limit the output of whiskey. What our temperance friends want is to limit the input as well as the output.

BEEF PEPTONOIDS.

(Concentrated Beef and Milk with Gluten.)

RECEIVED THE ONLY GOLD MEDAL AND HIGHEST AWARD

at the

International Health Exhibition, London, 1884,

AFTER A CRITICAL EXAMINATION OF ALL THE

BEEF AND CONCENTRATED FOOD

Productions, by a Jury Composed of the Best Chemists in Europe.

IT CONTAINS

ALBUMENOIDS 36.76 Percent.

Prof. Atfield says of Beef Peptonoids: "It is by far the most nutritious and concentrated Food I have ever met with."

Prof. Stutzer says: "If a medical man desires to give an invalid or convalescent a preparation by the use of which the formation of flesh and blood is to be promoted and vigor infused into a patient, Beef Peptonoids for this purpose stands first and foremost amongst all the preparations I have examined."

Prof. Mehu, Paris, says: "It is evident from its composition that BEEF PEPTONOIDS contains in a highly concentrated form the elements of a **complete food**, (nitrogen, fat, saccharine matter, mineral salts, phosphoric acid and iron)."

Sample Sent Gratis and Post Free by

**REED & CARNRICK,
New York.**

The Annals of Hygiene.

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PHILADELPHIA, AUGUST 1, 1887.

No. 8.

Communications.

THE PREVENTION OF CHOLERA INFANTUM AND KINDRED DIS- EASES, AND OF POISONING BY CHEESE, MILK, ETC.

ABSTRACT OF A PAPER ON THE CHEMISTRY OF
TYROTOXICON, ITS ACTION UPON LOWER
ANIMALS, AND ITS RELATION TO THE
SUMMER DIARRHEAS OF INFANCY.

BY VICTOR C. VAUGHAN, M. D., PH. D.,
Professor of Physiological Chemistry in the Uni-
versity of Michigan, and member of the
State Board of Health.

[At the meeting of the State Board of Health, April 13, 1887, Dr. Vaughan made a report on tyrotoxicon, which is the poison which he has found in poison cheese, milk, ice cream, and oysters. His full report will appear in the annual report, in advance of which this abstract is published by the State Board of Health, for the information of the people.]

Since the last report in regard to tyrotoxicon,* it has been ascertained that if some butyric acid ferment be prepared as is ordinarily done in the preparation of butyric acid, and some of this be added to normal milk, and the whole be kept in closely stoppered bottles for eight or ten days, the poison will be developed in the milk in considerable quantity. The milk should be filtered, the filtrate neutralized with sodium carbonate, and then extracted with ether.

*Proceedings of the State Board of Health of Michigan, October, 1886, and annual report of the same board, pp. 154-164.

Having a strong solution of the poison in absolute alcohol, which had been obtained from milk inoculated as stated above, we added to it some platinum chloride, and began to evaporate on the water-bath. As soon as the alcohol evaporated, the residue exploded with great violence. This experiment was repeated a number of times with like results. From some of this alcoholic solution the platinum was removed with hydrogen sulphide gas; but the filtrate was then found to have lost its explosive property. This reminded us that diazobenzol compounds form with platinum chloride, a highly explosive compound, and that these are also decomposed by hydrogen sulphide. Some diazobenzol nitrate was prepared according to the method of Griess, and comparisons made between this and tyrotoxicon.

[Here are given in detail the chemical experiments and experiments with animals, by which the identity of tyrotoxicon with diazobenzol is established.]

I think it highly probable that diazobenzol, or some closely allied substance, will be found in all those foods which from putrefactive changes produce nausea, vomiting and diarrhea. In some oysters which produced these symptoms I have recently found tyrotoxicon.

TYROTOXICON AND CHOLERA INFANTUM,
AND LIKE AFFECTIONS.

The experiments upon animals (which

are given in the full paper to be published in the annual report of the State Board of Health) convince me that the development of tyrotoxin in milk is a frequent cause of cholera infantum and kindred affections. When we remember that these diseases are most prevalent among the poor classes of our large cities where fresh milk is almost unknown, we can readily understand their frequency. By such people milk is often not obtained until it has begun to sour, then it is kept at a high temperature and often in a most foul atmosphere, and we all know something of the readiness with which milk takes up bad odors. This milk is then eaten by the little ones who are weakened by poverty and everything that poverty means, insufficient food generally, and that of the poorest quality, insufficient clothing, insufficient and vitiated air. With these facts before us, it is not surprising that in all our large cities thousands of children die annually from the summer diarrheas. Moreover, in our country places, how little attention is given to the food of children, we all know from actual observation. Cows stand and are milked in filthy barns and yards. The udders are generally, so far as my observation goes, not washed before the milking; the vessels for the milk are frequently found not as clean as they should be. Then there are the thousands of children that must draw their sustenance from bottles, the cleansing of which is in many families not properly attended to. Crusts of decomposing milk form around the neck of the bottle, in the tube and nipple, and lead to the rapid decomposition of the entire contents of the bottle. I think that one of the most important advantages to be secured to breast-fed children arises from the lessened danger of infection of the milk with germs which may produce poisonous ptomaines.

I would not claim that decomposed milk is the sole cause of the summer diarrheas of children, nor would I claim that tyrotoxin is the only poison that may be developed in milk. It is only one of a large class of bodies which are produced by putrefaction, and many of these are cathartic in action.

RULES FOR THE PREVENTION OF THE DEVELOPMENT OF TYROTOXIN IN MILK.

1. The cows should be healthy, and the milk of any animal which seems indisposed should not be mixed with that from the perfectly healthy animals.
2. Cows must not be fed upon swill, or the refuse of breweries, or glucose factories, or any other fermented food.
3. Cows must not be allowed to drink stagnant water; but must have free access to pure, fresh water.
4. Cows must not be heated nor worried before being milked.
5. The pasture must be free from noxious weeds, and the barn and yard must be kept clean.
6. The udder should be washed, if at all dirty, before the milking.
7. The milk must be at once thoroughly cooled. This is best done by placing the milk can in a tank of cold spring water or ice-water, the water being of the same depth as the milk in the can. It would be well if the water in the tank could be kept flowing; indeed, this will be necessary unless ice water is used. The tank should be thoroughly cleaned every day to prevent bad odors. The can should remain uncovered during the cooling, and the milk should be gently stirred. The temperature should be reduced to 60° F. within an hour. The can should remain in the cold water until ready for delivery.
8. In summer, when ready for delivery, the top should be placed on the can and a cloth wet in cold water should be spread over the can, or refrigerator cans may be

used. At no season should the milk be frozen; but no buyer should receive milk which has a temperature higher than 65° F.

9. After the milk has been received by the consumer, it should be kept in a perfectly clean place, free from dust, at a temperature not exceeding 60° F. Milk should not be allowed to stand uncovered, even for a short time, in sleeping or living rooms. In many of the better houses in the country and villages, and occasionally in the cities, the drain from the refrigerator leads into a cesspool or kitchen drain. This is highly dangerous; there should be no connection between the refrigerator and any receptacle of filth.

10. The only vessels in which milk should be kept are tin, glass or porcelain. After using the vessel, it should be scalded and then, if possible, exposed to the air.

PREVENTION OF SUMMER DIARRHEAS.

But in the prevention of the summer diarrheas, attention to the food must not stop with its introduction into the body. The ferment which produces tyrotoxinon is widely distributed, and it only awaits conditions suitable for its development. We do not know exactly what germ it is that produces this poison: but it is either the butyric acid ferment or some ferment which is frequently developed along with the *bacillus butyricus*, because I have found that if some butyric acid ferment be prepared according to the method usually followed in making butyric acid, and milk be inoculated with this and allowed to stand at the temperature of the body for a few hours, or at the ordinary temperature of the room for several days, the poison will appear. Moreover, as is well known, the *bacillus butyricus* grows best in the absence of air, and we have already seen that the exclusion of air favors the development of tyrotoxinon. We are

aware of the fact that the butyric acid ferment frequently does develop in the stomach. Therefore, I think that the prevention of these diseases necessitates some attention to digestion. If the food lies in the stomach or intestine undigested, putrefactive changes will occur there.

During the hot months, children who are allowed to take food at will often drink large quantities of milk simply for the purpose of quenching thirst. I feel that this overloading the stomach with milk, caused by thirst, often is of no little detriment. It is hardly necessary to specify in regard to other ways in which attention should be given to the digestive organs of children. Those that partake of other foods with their milk should be allowed only the most wholesome articles, and these should be in most perfect condition. Moreover, the depressing effects of extreme heat on the nervous system and its consequent injury to digestion should always be borne in mind.

WHAT TO DO WHEN SUMMER DIARRHEAS OCCUR.

The first thing to do is to stop the administration of milk in any form. The ferment is present in the alimentary canal and giving the best of milk would simply be supplying the germ with material for the production of the poison. This no-milk treatment is not by any means a new idea; but the reason for it has not been hitherto understood. Now that we know that a powerful poison is formed from the putrefaction of the milk, the necessity of its exclusion must become apparent to all.

[Here Dr. Vaughan quotes from one of his former reports on tyrotoxinon,* an account of a case of cholera infantum due to tyrotoxinon in milk. It occurred in his own practice and admirably illustrates

*Proceedings of State Board of Health of Michigan, Oct., 1886, p. 4; and annual report of same board for 1886, p. 163.

the necessity of withholding milk in such cases.]

The food used may consist of chicken and mutton broths, and rice or barley water. With this list no difficulty will be experienced in giving the child sufficient nourishment.

ALCOHOLIC AND OPIUM INEBRIETY, AND THEIR TREATMENT, WITH ILLUSTRATIVE CASES.

BY EDWARD C. MANN, M. D., OF BROOKLYN, N. Y.

Medical Superintendent Sunnyside Private Hospital for Inebriates, the Morphine Habit, and Diseases of the Mind and Nervous System.
Member Medical Society of the county of New York, American Association for the Cure of Inebriates, Vice-President International Congress on Inebriety, London, 1887.

ALCOHOLIC INEBRIETY.

From our personal experience in this field we take a very sanguine view of the good that can be achieved by the control and treatment of these cases. Those persons who have inherited the neuropathic diathesis are the ones in whom the disease of inebriety and dipsomania are the most easily established. The great diagnostic point attending alcoholic inebriety is the *irresistible impulse*, by which the patient is compelled to gratify his morbid propensity, being blind during the paroxysm to all the higher emotions, and pursuing a course against which reason and conscience alike rebel. When the disease is fairly established the craving for alcohol, which comes on daily, weekly or monthly, perhaps, is perfectly uncontrollable by the patient. His will is overcome by the force of the disease, and he will invent any pretext as an excuse for drinking at these times. It is not a moral lapsus at all. It is a true disease, and one which exists to an alarming extent to-day, among all classes of society, especially affecting

those who have a delicately organized nervous system, females being quite as prone to it as males, especially young married ladies. The disease affects our most brilliant men and women; those who are cultivated and refined, seemingly by virtue of their highly sensitive nervous systems.

Before the paroxysm comes on, the patient becomes uneasy, restless, cannot sleep, becomes very nervous, and finally commences to drink and rarely stops short of complete intoxication. He continues this course for a week or fortnight and then is overwhelmed with shame and remorse and makes many promises to reform, which the friends believe in, as they are very apt to view inebriety as more of a bad habit than a disease. This is not the case, however; it is a disease, and has to be cured—not reformed. The victim of alcoholic inebriety pursues his daily avocation for some weeks, and in some cases for some months, perhaps not touching any stimulants during the interval. When the time for the next paroxysm appears, he again shows the same symptoms of prostration and restlessness, with many uneasy, vague sensations, and the irresistible craving for alcohol again appears, again to overcome the patient's will, who perhaps tries to fight against his impulses to drink. A lady from central New York writes as follows:

“In the interval between my paroxysms I do not taste liquor, and have no desire for it. About every second month I suffer from insomnia and neuralgia, perspire profusely, and am so restless that I can't sit still; feel so nervous that I would like to scream, and then the intense craving for alcohol comes on, which I have such a horror of, but which I can't resist, and I leave my home to get whiskey; and, having obtained it, drink until I am unconscious. Any amount of liquor short of sufficient to induce complete intoxication

does not afford me any relief. I feel my degredation, but I can't stop; and my husband thinks I have a bad habit which I could control if I would. God knows I want to be cured of this terrible craving for drink. Can you help me?" &c., &c.

There are thousands of men and women in this country, especially along the Atlantic coast, where the extremes of heat and cold operate in the production of a very sensitive nervous system, who are to-day inebriates and who want to be cured. In some cases they are not willing to leave home and put themselves under that remedial restraint which is absolutely essential for a cure; and in other cases the patients' friends do not appreciate the true state of affairs, and rely again and again on the promises of reform, which the patient makes after each paroxysm of inebriety. He makes the promise of reform honestly enough; but it is precisely as if a case of chronic or recurrent mania, with lucid intervals, should promise not to have another periodic attack of insanity.

Dipsomania is a periodic mental disease, and it can be cured if regular systematic treatment and remedial restraint for a sufficient length of time be applied. A very much larger per cent. of cures which will be permanent, can be made in alcoholic inebriety than have ever been shown yet. The cause of failure to cure this disease is the great difficulty in keeping patients long enough under treatment. A man or woman is going to ruin, business prospects are becoming blighted, domestic misery is incalculable; and yet the friends of that patient hesitate when told that such a patient ought to remain under treatment for a year in order that a complete cure, with no fear of a relapse, may be made. It is not alone being kept away from alcohol, as many physicians seem to think, that cures alcoholic inebriety. From an experience of many

years in treating diseases of the mind and nervous system, we know of no disease that requires more careful study of each individual case and more systematic treatment than does alcoholic inebriety. We can get good cures, that will be permanent, by such methods, and by no other.

The lost will power has to be restored, and the uncontrollable craving for alcohol cured; and this means building up the centric nervous system from its very foundation. We have a nutritional disturbance of the nerve cells of the whole central nervous system; and the brain and nervous system have to be brought up to their highest resisting point, and the physical system, which has become undermined and shattered, has to be restored to the normal, before the patient is cured. This takes time, more time than most of our patients wish to give. These patients soon die if not cured, and many go to the insane asylum, all of which might have been avoided if the disease had been treated properly in its curable stages. There are some inebriates who do not wish to be cured. This class of cases it is very difficult to deal with, but in any case that desires a cure we assert positively that a permanent cure is possible, and can be obtained nine times out of ten if the patient will place himself, or be placed by friends, under treatment for a period varying from six months to a year, according to the severity of the case.

The following cases illustrate what can be accomplished:

Mr. —, aged 30 years, had inherited a delicate and sensitive nervous system from his mother. When at college he led his class, and was a brilliant writer and talker. His uncontrollable alcoholic appetite had originated in moderate indulgence; and what was at first a moderate, healthy desire soon developed into an increased, inordinate demand for alcoholic

stimulants whenever he was tired, or at all depressed. When the craving appeared, which it did about once a month, he would leave his business, no matter however imperative his engagements were, and drink for ten days or a fortnight, and then bitterly regret his course and make many good resolutions for the future; which of course he could not keep, as the next paroxysm would, as before, result in a course of intoxication, lasting for about the same length of time.

Upon his admittance he was suffering from great nervous agitation and insomnia, but expressed a desire to be cured.

He was put to bed under the care of a trained nurse, given at frequent intervals Valentine's meat juice—as he had not eaten or slept for several nights—and milk and lactated food in hot water. Prolonged warm baths with cold to the head to quiet the nervous system were given; and to promote sleep and further contribute to the soothing effects of the warm bath, $\frac{1}{80}$ gr. of hyoscin hydrobromate was given hypodermically. This course of treatment was kept up for a few days, and then after the digestive system returned to its normal condition, the patient was allowed full diet, and centric galvanization and general faradization were employed to invigorate and build up the nervous system. Plenty of malt and hypophosphites were given, and iron, quinine, arsenic and strychnia given in combination as a tonic. Plenty of outdoor exercise with an attendant was prescribed; but the patient was not allowed to visit any place where liquor was sold. The patient coöperated with us in our endeavor for his cure, and at the end of eight months was discharged permanently cured, with no craving for alcohol, and with the brain and nervous system in normal condition. We see the patient frequently, and there has never been any return of the craving for alcohol.

CASE II.—Genl. — had, by exposure and hardship during the late war, fallen into a condition of neurasthenia, which had induced him to seek for the relief obtained transiently from stimulants. An uncontrollable appetite was soon developed, which this accomplished gentleman in vain fought against. He applied for admission voluntarily, asking not to be discharged until cured, saying that he felt the necessity for restraint. His digestive powers were enfeebled, his appetite was gone, his muscular system was enfeebled, and the general nutrition disordered. He was placed with a good nurse under the most favorable hygienic influences; cheerful, pleasant and tranquil surroundings were provided for him. Plenty of good nourishing food administered, and an abundance of fresh air and exercise. Electricity as centric galvanization and general faradization was daily administered; a tonic of iron, arsenic and strychnia given, and the disordered state of the brain and nervous system removed by quiet and rest, and appropriate medication. A perfect cure was the result in seven months, and this gentleman returned to his position, which he has ever since occupied with dignity and honor. An early death, or insanity seemed inevitable at one period of his disease, and would undoubtedly have ensued if he had not placed himself under remedial restraint, as, unaided, he could never have conquered his uncontrollable craving for alcohol.

CASE III.—A young married lady, aged 34, was admitted upon request of her husband. She was drinking heavily, eating and sleeping very little, and could give no coherent account of herself.

She was put under the care of a trained nurse, who was directed to put her to bed, and a hypodermic of $\frac{1}{80}$ gr. of hydrobromate of hyoscin given to quiet

her intense restlessness and induce sleep. She slept six hours, and upon awaking was given Valentine's meat juice every hour, with lactated food in hot water. She retained this and passed a fairly comfortable day. At night two tablespoonfuls of the following were given :

R	Tr. opii deod.	
	Ext. hyoscy. fld.....āā	f 3 j
	Chloral hydrat.	
	Pot. bromid.....āā	3 j
	Tr. capsici.....	f 3 ss
	Tr. aconit. rad.....	mg v
	Aq. menth. pip.....q.s.ad.	f 3 iv

M.

This produced quiet sleep of a refreshing nature, and was repeated for three consecutive nights, the diet in the day time being restricted to Valentine's meat juice, milk and lactated food.

As the insomnia and nervous agitation disappeared, with warm baths and sedatives, and the digestive system became normal, the patient was allowed to get out of bed and was put on full diet, and electricity and tonics. Plenty of outdoor exercise was insisted upon, the patient, however, never being allowed to go out alone.

The lost will power was gradually restored. The enfeebled and broken-down system strengthened and invigorated; the brain and nervous system brought up to the highest resisting point, and the patient discharged, cured, at the expiration of nine months. She has never since that time, two years ago, had any craving for alcohol; is an excellent housekeeper and an affectionate wife, and a permanent cure has evidently resulted.

Many more cases could be recorded, where brilliant men and women have been restored to their homes and to society, permanently cured.

THE MORPHINE HABIT.

The addiction to the morphine habit is generally the result of some illness, during which, to alleviate pain, it has

been found necessary to administer morphia for a length of time. A certain number of persons who are neuropathically endowed find it simply impossible to drop the morphine; but continue it, not so much for the pleasant sensations produced by it, as because they suffer terribly when without their customary allowance. A professional man addicted to morphine cannot do his work without it; a society woman cannot entertain without it; an operator on Wall street cannot buy and sell stocks or trust his judgment while deprived of his stimulus. The morphine habit exists when the patient feels the irresistible need of taking morphia. Patients become addicted to it because it allays not only physical pain but, also mental suffering; and many patients take it to cause their troubles to disappear and to obtain a calm filled with pleasure. The morphine habitue takes the drug hypodermically for the instant sense of relief he experiences, and for the rapid and ineffable solace obtained. Patients also seem to feel a pleasure in making the punctures, and use, generally, concentrated solutions, which are painless. Patients describe a sense of satisfaction and felicity as the first effect of the injection, which does not produce sleep, but an awakening of the mind. Many cases we have treated in eminent men who have taken it to quicken the mental faculties, although nothing betrayed, except to a professional eye, the hidden vice to which they were addicted. The man or woman addicted to the morphine habit soon gets to that point where the will is paralyzed, and their personal consciousness benumbed. They have not enough energy to throw off this torpor, to break from their habit and take hold again of their duties. The intellectual faculties, except in rare cases, do not seem to be seriously affected. They are rather excited than weakened. There

is, however, a remarkable weakening and derangement of the moral sense caused by the morphine habit. Insanity is very rare, unless the patient be suddenly deprived of his morphia. Vertigo and insomnia are common.

There is anaesthesia; the reflex actions are weakened; there is constipation, and abstinence brings on a diarrhoea; the pulse is intermittent; the heart's action is weakened; there is dyspnoea, with hoarseness, especially when the patient is trying to abstain. The eyes lose their brightness; the patient becomes prematurely old; the face is sometimes an expressionless mask, and the skin takes on an earthy tint. The patient, if not cured, gradually falls into a decline and dies. In a typical case of morphine habit, if the patient is deprived of morphine, the strength leaves him, the mind becomes a blank and the patient suffers agonies. Give a large hypodermic injection, and almost in an instant the patient is an entirely different being, and for the time is completely rejuvenated. All serious work is impossible to a case of morphine inebriety deprived of his stimulus, and if abstinence is kept up, a violent frenzy is developed and collapse. The great diagnostic point attending this disease is the strange expression of the physiognomy, the wan complexion, the sunken eyes, the vacant look, and general appearance of dullness and listlessness. There is a marked lowering of the physical and moral tone. There are also some cases who retain an appearance of health, who enjoy an excellent appetite, and who, physically and mentally defy detection, until they voluntarily acknowledge their hidden vice. It is an invariable rule with a case of morphine inebriety that work is not possible, except under the influence of morphine. The morphine habituate almost always increases his dose

to get the intoxication, repose and comfort he wants; and this steady increase of poison injected means, of course, a progressive cachexia, both moral and physical. There are two classes of morphine inebriates, as there are of alcoholic inebriates. The one incurable, because they have no desire to break loose from the habit; and another curable, because they sincerely desire to be cured. Relapses are somewhat frequent, from the fact that when a cured patient is subjected to some painful disease he is tempted to re-commence the practice for the instant relief he knows he can get, and even one injection may precipitate all the former troubles upon him. A perfect cure, with no relapse, is very frequently obtained. In the treatment of the morphine habit, we regard abrupt suppression as absurd and barbarous, and by it we run the risk of producing serious results. Gradual suppression and reduction is the only sensible treatment, we think, and even this is not possible generally in the patient's own house, for he will surely cheat his physician, and obtain morphine in excess of that prescribed. The nerve tone has to be improved, sedatives are indicated, the insomnia has to be controlled, and the whole physical and moral tone brought up to the normal standard. Our plan of treatment consists of the bromides at first, followed by iron, strychnine, electricity and hot baths and mental quietude, and an atmosphere of tranquillity. The strictest surveillance is practiced for the first three weeks, and we use all the means which science furnishes to cure the disease, and we regard it as very curable. The following case illustrates the general plan of treatment:

Dr. ———, an excellent surgeon, was admitted at his own request to be treated for the morphine habit. He had suffered from a severe illness, during which he had

been given hypodermically considerable morphia for several weeks. Finding that he could not stop the morphine injections and do any work, he endeavored to decrease the dose, but was utterly unable to stop it; and finally commenced increasing it, until at the time he was admitted, he was taking 10 grains per day hypodermically. He expressed the most earnest desire to be cured and get back to his practice. The plan of treatment was as follows: We commenced with 50 grains of bromide of sodium administered at ten and at four o'clock in a glass of water, gradually decreasing the morphine and increasing the bromide, until on the ninth day after admission the patient was taking no morphine. Warburg's tincture in one drachm doses was given daily before breakfast, and tr. gentian and tr. chloride of iron in an elixir before each meal. Insomnia, which is always present in these cases, was combatted by the hydrobromate of hyoscin in $\frac{1}{80}$ gr. doses. After the complete withdrawal of the morphia, during which the patient hardly suffered at all, hot baths and sweet spirits of nitre were given to eliminate the bromides. Then the patient was given electricity and a tonic containing iron, strychnine and digitalis.

The electricity was administered as general faradization, the negative pole being applied at the lower part of the spine, while the positive was applied on the cranial centre, on the cervical sympathetic and on each side of the sixth and seventh cervical vertebræ. Finally, both negative and positive poles should be applied on each side of the sixth and seventh cervical vertebræ. A milk diet was prescribed for the two days following the complete withdrawal of the morphine to prevent the diarrhoea, which is apt to appear at this time. At the end of the fourth week the patient had gained twenty pounds of flesh and was

in excellent condition. He was requested to remain one week more for observation, and then was discharged perfectly cured and having experienced little or no suffering during treatment. The history of this case is the history of scores of cases which we might transfer from our case book to this paper; but it is needless, as we treat all cases of morphine habit alike, and with very few exceptions with the same gratifying result. We can certainly show 90 per cent. of cures during the past two years in cases that were admitted desiring a cure.

The only exception to the above plan of treatment, is where the patient is very weak upon admission, when we adopt a preliminary plan of treatment for one week to build up the patient before cutting off any morphine.

We know of but two cases that have relapsed during the past five years, and they both came back promptly for another course of treatment. In each of these they had suffered from illnesses where the family physician had thought it wise to administer morphine hypodermically, and this had resulted in a renewal of the use of the drug. All the other cases have remained cured as far as we have been able to trace them.

The only other point we would make on the treatment of the morphine habit is the great benefit which we have derived from the use of cocaine in 10 minim doses of a 4 per cent. solution hypodermically thrice daily for two days after the withdrawal of the morphine. It has, in our hands, acted magically in quieting the restlessness which then appears.

128 PARK PLACE,

Near Prospect Park, Brooklyn, N. Y.

A DEPRESSED LOT.

There is a temperance society in California which permits its members to drink "when depressed." The society is composed of a very down-in-the-mouth lot.

STATE BOARD OF HEALTH OF PENNSYLVANIA.

The seventh regular meeting of the Board was held in the Supreme Court-room, Capitol Building, Harrisburg, Wednesday, July 13, 1887, at 2.30 P. M. Present, Drs. Engelman, McClelland, Dudley, Lee, and Mr. Howard Murphy. In the absence of the President, Dr. McClelland was, on motion, called to the chair.

The Secretary then presented two communications from Dr. J. S. Stewart, of Erie, Dr. Germer's physician stating that the condition of the latter's health was such as to entirely preclude the possibility of his attendance at this meeting, and even to give cause for serious anxiety. The communications were received and ordered to be placed on file. The Secretary also received a communication from Dr. J. F. Edwards, regretting his unavoidable absence from the meeting. Dr. Dudley offered the following resolution, which was unanimously adopted:

"Resolved, That the Secretary be, and is hereby requested to transmit to Dr. Edward Wm. Germer, the President of the Board, our regrets, in view of his absence from our meeting and our heartfelt sympathy with him in his illness; and, also, to express to him our hope for his speedy recovery and restoration to his eminent usefulness."

The commissions of Dr. James H. McClelland, of Pittsburg, as a newly appointed member for the ensuing six years to succeed his own expired term, and of Mr. Howard Murphy, C. E., for six years to succeed the expired term of Rudolph Hering, C. E., were presented.

The minutes of the sixth regular meeting, held April 14, 1887, were read and approved. The report of the Secretary was then read as follows:

The Secretary begs leave to respectfully present the following report of his official

acts since the last meeting, April 14, 1887. He asks leave, however, to preface it by an expression of his acknowledgement of the kindly expressed sympathy of the board with him in the personal bereavement which rendered it impossible for him to meet his fellow members on that occasion. The following are the items of information, which it is of importance that the board should possess or take action upon:

1. On Saturday, April 16, 1887, notification was received from Health Officer Gray, of Pittsburg, of the existence of a case of small pox in that city, which had been imported into the country through the port of Philadelphia, on a steamer supposed to be named "Largoff." Health Officer Patterson, of Philadelphia, was at once communicated with on the subject, with the suggestion that the steamer be disinfected and the passengers and crew placed under strict surveillance. The Health Officer's reply showed the vessel to have been the "Lord Gough," from which a patient, sick with small-pox, had been removed to the Municipal Hospital. The passengers had been examined and the ship fumigated. It was evident, however, that the precautions taken had not been sufficient, or at least efficient. In the opinion of the Secretary it is of the utmost importance that strict quarantine should be enforced against this disease all the year round, winter as well as summer. The report was received and ordered for publication. Action on it was deferred to "unfinished business."

2. The interstate notification of contagious and infectious diseases adopted by this Board at its meeting in November last on the recommendation of the National Conference of State Boards of Health, could not but be regarded as a decided step in advance in unifying the sanitary administration of the entire

country. A detailed statement of the instances in which notification of small-pox had been given and received since the initiation of the plan in this State was then presented.

3. The Quarantine of the Delaware River and Bay is a subject of constantly increasing importance and anxiety. Philadelphia is very illy provided by either national or state quarantine systems for the reception of a cholera-laden vessel. This fact was brought out with great prominence by Dr. Rauch, the Secretary of the State Board of Health of Illinois, in his valuable report on the "Coast Defences of the United States against the introduction of contagious diseases," the results of a tour of personal inspection from the mouth of the Rio Grande to the Gulf of St. Lawrence, made by direction of his State Government. It needed no demonstration, however, to show that the provision made seventy years ago for the little city of 80,000 inhabitants is as inadequate to the protection of the metropolis of nearly a million, as are the swathing bands of an infant for the clothing of the full grown man. In order to enable the Board to judge just what the present condition is, a correspondence between the Secretary and Dr. Preston H. Balthache,* surgeon of the United States Marine Hospital Service for the Middle Atlantic Division, was submitted. The papers were received and ordered on file and for publication, and action deferred until unfinished business.

4. As the heat of summer begins to promote decomposition, the Secretary is in receipt of constantly increasing complaints from the rural districts and small villages and boroughs.

The first of these is that of defective drainage at Lansdowne, Delaware Co. The Secretary had referred the case to

Inspector Atkinson, who recommended that the piece of land complained of be drained and filled up with fresh earth. An order to this effect was served upon the proprietor, who had complied with it so far as drainage was concerned, but an additional complaint had been received that it had not been filled up, and it would be necessary to send an additional order. The Report was received and ordered for publication, and the action of the Secretary approved.

5. The report of Inspector Kennedy showed that the rumors which prevailed in the vicinity of Natrona, Alleghany county, of the existence of typhoid fever among the workmen of the Pennsylvania Salt Works, were unfounded, only a few cases of measles being found to exist. Report received and ordered for publication.

6. The complaint of several citizens of Bryn Mawr, Montgomery county, of a cellar left open, and full of water, had been reported on by Inspector Atkinson, and the order for abatement of the nuisance had been sent. No farther complaint having been received, it was presumed that it had been obeyed.

Report received, and action approved.

7. The complaint of the citizens of Chartiers, Alleghany county, of nuisances in the shape of foul slaughter-houses had been referred to Mr. L. H. Hunter, Inspector of the Alleghany District, and orders sent to him for abating the nuisances were being complied with.

Reported, accepted and action approved.

8, 9. Complaint and counter complaint of overflowing cess-pool and defective drainage on the part of neighbors at Fernwood, Delaware county. These were brought to the notice of the Board in order to obtain a more definite expression of opinion on the part of the Board as to the extent to which it was the duty of the

* We will publish this correspondence in our next issue.

Secretary to entertain private complaints. He would call the matter up, and ask for action under the head of unfinished business.

10. The Annual Report of the Health Officer of Scranton was received and ordered for publication.

11. A communication in regard to the unsanitary condition of Alleghany Furnace, Blair county, had been referred to Inspector Dudley, but no report had been yet received.

12. The Report of Inspector Payne of the condition of Sugar Creek, a stream running through the borough of Troy, Bradford county, showing said stream to be simply an open sewer, declaring it a nuisance and suggesting the necessity for the construction of a covered drain, was received, ordered on file, and action deferred until unfinished business.

13. A complaint of citizens of Covington, Tioga county, had been referred to Inspector Payne. The nuisance consisted of foul slaughter-houses. The report of the Inspector had not yet been received.

The action of the Secretary was approved.

14. A communication was read from the Burgess of Scottdale, Westmoreland county, requesting the board to send an inspector, and offering to pay the expenses of the inspection. The Secretary asked for instructions in such instances of offer of pecuniary compensation. It was the sense of the board that the offers should by all means be accepted, especially in view of the small appropriation for the work of the Board, and that a separate account should be kept of all monies so received.

15. His Excellency, the Governor, had transmitted a complaint made by J. D. S. Pringle, Justice of the Peace, of a foul slaughter house in Westmoreland county, in the town of West Brownsville. Mr.

Hunter had been instructed to investigate and report. Report accepted and ordered on file.

16. A complaint of foul slaughter houses at Homestead, Alleghany county, which had been referred to Mr. Hunter, accepted, etc.

17. A similar complaint from Dr. Remsburg, of Worfordsburg, Westmoreland county, offering to pay the expenses of an inspection. Referred back to Secretary for action.

18. Complaint of the foul condition of Elk Creek, running through the borough of St. Marys, Elk county. Referred back to the Secretary for action.

19. Complaint of a fat rendering establishment at Hulmeville, Bucks county. Similarly referred.

20. A case of supposed poisoning by dried beef at Altoona. A specimen of the beef had been sent to a chemist for examination and he had not yet reported.

21. The Secretary had been applied to by the health officer of Scranton for an opinion as to whether under the new act for the government of cities, below the 2d class, a physician is eligible as health officer. He read a letter, sent in reply, deciding the question affirmatively. His decision was sustained by the board and the letter ordered on file.

22. The organization of the first Board of Health under the new law, that of Scranton was announced.

23. Also the report of the organization of a Board of Health in Braddock. The Secretary referred to the pressing necessity of such an organization in that place, for prevention of the pollution of the Monongahela river, which was at this point in a condition too horrible to be adequately described.

24. A letter was read from the Prothonotary of Juniata county, requesting compensation for copying the register of physicians of that county.

25. A copy of the proposed Rules of the Pennsylvania Railroad Company for the transportation of corpses was presented together with a letter written by the secretary to the general baggage agent of the road, explaining the regulations of the Board upon that subject. Both papers were ordered on file and the reply of the secretary approved.

26. The Secretary presented a copy of the requisition of the board for stationary supplies, etc., which was approved.

27. The Secretary read his Financial Report as follows. The Secretary acting as Treasurer begs leave respectfully to report:

That there was remaining in the Treasury, April 14th, 1887,	\$147 27
That there was received from the Auditor General, June 11th, 1887, warrant for the quarter ending Aug. 31st, 1887,	\$750 00
Making a total of receipts, of	\$897 27
That there had been expended during the same period for incidental expenses,	\$200 54
Travelling expenses,	83 63
Inspections, . . .	90 00
Analysis, . . .	215 00
Clerical expenses,	75 00
In all, ...	\$664 17

Leaving a balance in treasury of \$233 10

The report was accepted, approved and ordered on file.

The number of written communications received by the Secretary since the November meeting had been five hundred and eighteen (518); the number sent during the same period, five hundred and sixty-three (563). The number of books received in exchange for the library had

been eighteen (18); the number of pamphlets, eighty-four (84).

The number of complaints received since April 14th had been thirteen (13).

The Report of the Secretary was then accepted as a whole, and approved.

Reports of Standing Committees being next in order,

The Executive Committee, through its chairman, Dr. Dudley, reported that the committee had held two meetings since the last meeting of the Board; at which bills to the amount of \$1,624 22, comprising vouchers 136 to 163, had been audited and approved. The report was accepted and ordered, etc.

2. The Committee on Registration and Vital Statistics, Dr. Benj. Lee, chairman, reported: That, owing to the failure of the Legislature to provide the necessary machinery and means for carrying out the work of registration, but little could now be accomplished; the only possible sources of accurate information being the County Medical Societies. The report was accepted and ordered on file.

3. In the absence of the Chairman, Dr. Edwards, there was no report from the Committee on Preventable Diseases.

4. On behalf of the Committee on Water Supply, the Secretary called attention to a letter from the health officer of Scranton, which was read by Mr. Murphy, describing the causes of possible pollution of the Scranton water supply. The subject was referred to the Committee on Water Supply, with instructions to investigate the subject in conjunction with the executive officer.

5. The Committee on Public Institutions, etc., Dr. McClelland, chairman, reported progress.

6. The Committee on Adulterations, etc., Dr. Pemberton Dudley, chairman, reported, that notwithstanding the accumulating evidence of dangerous adulterations

in food, the committee was not able to enter upon this important field for want of funds, the Legislature having refused to make an appropriation for this object. The Report was accepted and ordered on file.

7. Dr. David Engelman, chairman of the Committee on Sanitary Legislation, reported that out of the ten bills and a joint resolution in which this Board was directly or indirectly interested, only three bills and the joint resolution had passed. The report emphasized the importance of making use of the interval between the present time and the next meeting of the Legislature to create a popular sentiment in favor of more liberal support to the board. It concluded by offering the following resolutions, which were adopted, and the report approved and ordered on file:

Resolved, That this Board desires to express its keen appreciation of the earnest and untiring efforts of Dr. S. T. Davis, the honorable representative from Lancaster county, to further the interests of the board and of public health, by urging such measures upon the Legislature of the Commonwealth as would strengthen the hands and confirm the powers of the Board.

Resolved, That in the final success of certain of these measures, it recognizes the masterly conduct of a leader in the Legislative arena; while the failure of others simply points to the fact that the education of the popular mind, of which that of the Legislature is but a reflection, has not yet progressed sufficiently in sanitary matters to enable it to appreciate the necessity of a slight pecuniary outlay, in order to establish sanitary science and vital statistics on a firm basis in every portion of this great and populous State.

Resolved, That this Board tenders Dr. Davis, and through him the other mem-

bers of the Legislature of both houses, whether belonging to the medical profession or not, who advocated the passage of the bills which emanated from it, sincere and heartfelt thanks.

The election of a president for the ensuing year was the next business in order. Dr. David Engelman, of Easton, was nominated, and the nominations were closed.

On motion, the secretary was instructed to cast a single ballot for Dr. Engelman. This was done, and the chair announced Dr. Engelman the president for the ensuing year. The president-elect then took his seat, appropriately acknowledging the compliment, and announcing his intention to faithfully discharge the duties of the office as far as in him lay.

Unfinished business being now in order, the secretary called up the subject of the Schooley shaft nuisance in Luzerne county, for the purpose of moving that Mr. Murphy be added to the special committee to which that subject was referred, with power to act. The motion was carried.

There being a vacancy in the chairmanship of the Committee on Water Supply, etc., the chair appointed Mr. Murphy to fill the position.

New business being in order the secretary presented bills comprising vouchers 136 to 152, which had been audited and approved by the executive committee. They were approved.

The subject of private disinfecting establishments was introduced by the secretary at the request of Dr. Edwards. On motion it was resolved: "That this Board would regard with favor and would encourage the establishment of private disinfecting institutions in our large cities; provided, they be placed under competent expert supervision and management."

Dr. H. L. Stickel and Dr. Paul A.

Hartman, both of Harrisburg, were then nominated for the position of inspector of the Susquehanna District.

Mr. Murphy was appointed teller and reported, that Dr. Stickel had received one vote and Dr. Hartman four votes. The chair accordingly announced that the nomination of Dr. Hartman was confirmed.

A communication from the Section on Public and International Hygiene of the Ninth International Medical Congress was then presented. It was accepted and ordered on file.

On motion the secretary was instructed to have a new edition of the Constitution and By-Laws with organization, etc., printed for the use of the Board.

Dr. McClelland called up that portion of the report of the secretary on the subject of the introduction of small-pox on the "Lord Gough," and Dr. Dudley, in this connection, offered the following resolution—

"*Resolved*: That in view of the fact that small-pox is occasionally introduced into Pennsylvania and the neighboring States through the foreign and coast-wise commerce of the port of Philadelphia, the State Board of Health earnestly requests the health authorities of said port to consider favorably the expediency of adopting still more rigid quarantine regulations against the above mentioned disease, and of enforcing them throughout the entire year."

It was ordered, and the secretary was instructed to transmit it to the proper authorities at Philadelphia.

Dr. McClelland was called up on the subject of quarantine of the Delaware River and Bay, and offered the following resolution—

"*Resolved*: That in the opinion of this Board, the quarantine facilities now existing on the Delaware Bay and River

are insufficient in extent and antiquated in character; and this Board therefore petitions the Government of the United States to complete the partial and inadequate arrangements which now exist at the mouth of Delaware Bay, and to extend the term of quarantine against small-pox throughout the entire year.

The Secretary called up that part of his report which referred to private complaint and counter-complaint at Fernwood, and presented form of letter, which, with the approval of the Board, he proposed to have printed and to use in all cases of individual complaint; making it necessary for a complaint to emanate from a public officer, or from ten citizens uniting in a sworn affidavit.

The form was adopted.

The Secretary presented a proposed circular on the subject of the hygiene of infants, which was approved and ordered to be printed and distributed.

The Report of the sanitary condition of Troy was called up, and it was ordered that the authorities of that borough be instructed to carry out the recommendations of the inspector.

On motion the Board then adjourned, *sine die*.

BENJ. LEE, *Sec'y*.

ADDRESS ON HYGIENE.*

BY J. D. THOMAS, M. D., OF PITTSBURG, PA.

It is pretty well established that most diseases of the zymotic, or germ type, and hence those that are infectious or contagious or both, which afflict the human family, are peculiar to the human family alone. These germs are given off through the *fæces*, by the skin, or with the breath. If in disease the *fæces* could be immediately destroyed or sterilized, the emanations from the skin or breath corraled and

* Abstract of address before the State Medical Society of Pennsylvania.

dissipated, we would then have arrived at that stage where all diseases of an infectious or contagious nature could be stamped out.

Attempts at prevention in this direction are seldom made, and when made are very imperfectly carried out. Let me cite typhoid fever, scarlet fever and diphtheria, diseases quite common, and ones that cover the above predication, and ones also through which contagion is conveyed. The physician gives the nurse strict instructions with regard to the disinfection of the stools of the typhoid fever patient, the proper precautions with regard to the disposal of the desquamation that takes place from the skin of the scarlet fever patient, and the necessary precautions are impressed with regard to the discharges from the nose and throat of the diphtheria patient. In the most intelligent families in what an imperfect and haphazard manner are his instructions carried out. In the case of the typhoid fever patient, the fæces, as a rule, are thrown into the privy-vault or dashed into the bowl in the house-closet without any disinfection whatever; in the former case jeopardizing the health of those who have occasion to visit the privy, and in the second case contaminating the sewer with typhoid fever germs as well as the air of the dwelling. The same thing is done with the water with which the scarlet fever patient is bathed, or forsooth it is thrown out upon the street for the benefit of every passing child.

* * * * *

Outside privies, as usually found, are constructed of wooden boxes with open interstices, and are a horrible thing to contemplate. Where excavations are being made in our cities for building foundations, we frequently see the workmen come across some of these old privy vaults that have been covered over and

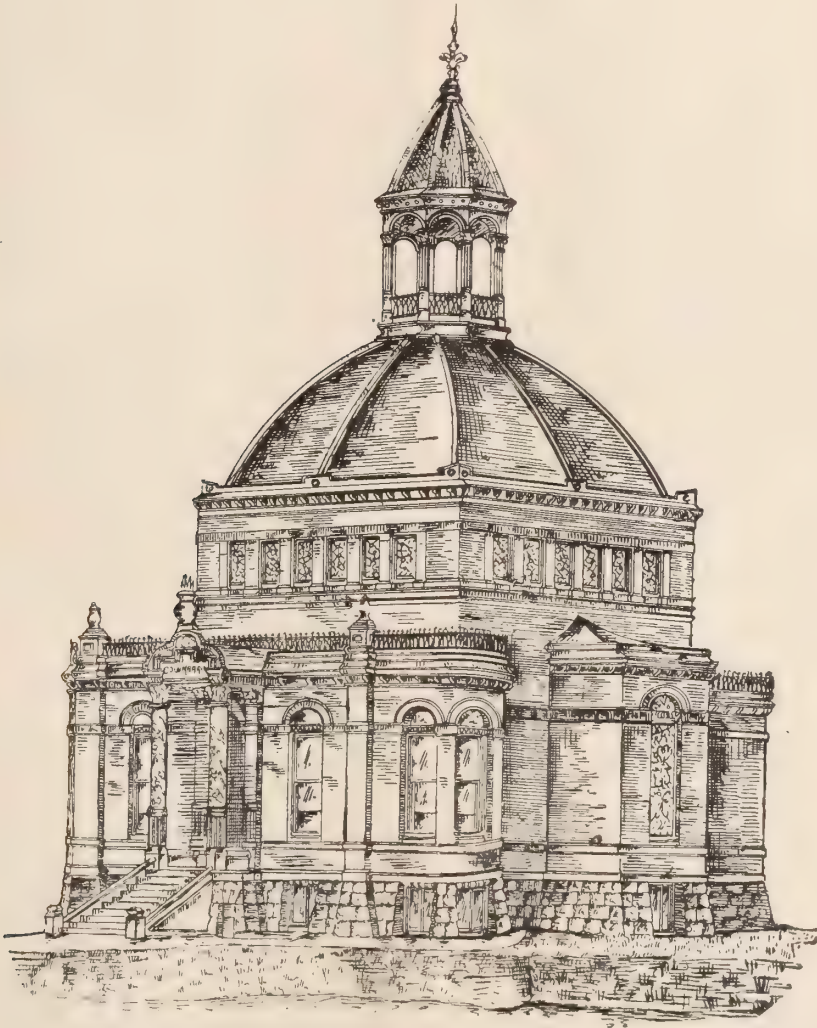
abandoned, and the soil for several feet about them is saturated with a dark and slimy material that has probably for years been giving up its gases loaded with lethal germs. Outside privies, however, are a necessity where sewers do not obtain, and even where they do exist are safer, in my opinion, if properly constructed than inside closets with their defective joints and traps. Sewers, however, are automatic in their operation and have so much to commend them that they necessarily become the system for large cities, and it is for the sanitary engineer to so perfect them and their connections with dwellings that they may be made perfectly safe. If these outside privies are walled with brick and laid in cement, and the bottom and sides thoroughly cemented so that they are impervious, the subsoil is thus securely protected from contamination. Where a ventilator, passing from below the seat to a sufficient height, is also attached these outside privies become, possibly, the safest and best receptacles for the *temporary* storing of human excreta. I would advocate that all outside privies throughout the State be constructed as herein suggested, a violation of which should entail a punishment to be enforced by a local or the State Board of Health. By this means, the construction of privies projecting over creeks or streams which carry off the fæcal matter, and which are thus constructed to save a little expense, would be abolished, the streams preserved pure, the subsoil prevented from becoming befouled, and the wells that are used for drinking water from becoming contaminated with typhoid fever and other germs. By such regulations we would have no further Plymouth epidemics.

* * * * *

When these privies are cleansed, what is to be done with their contents? The only safe and common sense method is to

cremate it. When the people are thoroughly aroused to the dangers lurking in human excreta, and this cannot be impressed upon them more forcibly than by *ex cathedra*, informing them that no patient can possibly have typhoid fever without first ingesting a part of the stools

township to appropriate a sufficient sum of money to have erected a crematory or garbage furnace. Crematories can be so constructed that all of this matter, including all manner of offal, can be consumed without any offence to the neighborhood.



of some preceding typhoid fever patient, there will then be no difficulty in getting the support of the public, and this we must aim at, to compel the authorities of every city, of every borough and of every

THE PHILADELPHIA CREMATORY.*

A handsome crematory building is being

* From the *Phila. Times*.

erected by the Philadelphia Crematory Association on Washington lane, between Woolston and Cemetery avenues, Germantown. The structure stands upon an elevation about three feet high in the centre of a thirty acre lot. This land is to be laid out in burial lots intersected with walks and drives.

The crematory covers an area of 57 by 96 feet and consists mainly of a first or chapel floor, and a basement or crematory chamber. The first room is about 32 feet square. The interior walls are of hard sand finish tinted to a light shade of terra cotta, and neatly decorated. The walls of the building are studded with niches fitted with plate glass doors set in a neat metal frame and furnished with a lock and key. In the niches are placed the jars or vases containing the ashes of the cremated body.

In the centre of the ceiling is a large dome of stained glass. The building receives light through twenty-seven stained glass windows set in niches at a height of thirty feet above the floor. The light is to be one of the features of the chapel. The floors of the chapel are constructed of iron beams and brick arches covered with a top surface of cement and richly ornamented with centres and borders of German tile. The entrance to the chapel is through an imposing doorway, on one side of which is a reception room and on the other an office. Directly in front of the entrance, in a semi-circular niche, is the altar. In front of this is a speaker's platform of white marble and German tile raised above the chapel floor. Fronting the altar is an automatic elevator, which appears like a catafalque. Upon this the body to be cremated rests while the funeral service is being read, and slowly and noiselessly descends into the cremation chamber, and the place where it stood is automatically closed over. At

the right of the chapel is an open stairway leading to the basement.

The cremation chamber is the same size as the chapel. At the end of the room, under the altar, is the entrance to the two large retorts of the furnace, in front of which the elevator descends. At the other end is an observation chamber and a post-mortem chamber. In connection with the furnace is a large coal vault. A massive cornice of sheet iron, which caps the building, forms a base for the dome, which is covered with sheet copper and surmounted by an open tower, the high pointed roof forming a base for the pinnacle, which is ninety-seven feet above the ground. Over the main entrance, between the two front columns, are the words cut in stone, "Columbarium," while capping each of the columns is a large metal urn of exquisite workmanship. The architectural style of the building is entirely original, the plans having been drafted by Brian & Goodwin, of 1413 Filbert street.

SUMMER IN THE SLUMS OF PHILADELPHIA.*



YOU will see twelve bunches of black crape fluttering from as many front doors in just as many squares of the city's 'slum' district," said a Second District policeman last week.

His remark tells of the dreadful mortality that is rampant in the hot, ill-smelling and filth-reeking localities where half-clothed children swarm in the gutters, where squalid misery jabbars in strange tongues, and lies prone on pavements or on cellarways

* From *The Philadelphia Press*.

gasping for a breath of air, which comes laden with noisome effluvia.

At the Health Office the records show that in just seven days 131 children died from cholera infantum alone. There were 268 little toddlers under one year of age who gave up their lives in the same seven days, and 78 youngsters under five years who do not now miss the air of Alaska, Bay or Spafford Street. The hot Summer of 1885 is on a parallel with that of this year, for 161 babies died in the corresponding week, and 283 children under one year also died in the same week of that year.

The total number of deaths for the week ending July 23, the hottest week so far of this intensely hot summer, was 691, as against 695 in the corresponding week of 1885. There were sixty-seven deaths from heat stroke in the three hottest days of the week, and the records show, curiously enough, that fifty-three of this number were foreigners. Doctors say that these alien folk were not acclimated, and that they did not pay attention to the hygiene that American-born people now are beginning to understand so well.

ONLY A STEP ACROSS THE BORDER.

It is but ten minutes' walk Southward from Chestnut street, where well-to-do Philadelphia swelters, in seersuckers and lawns, that this great recruiting ground of the charnal-house is located. Hardly are the shade trees and smooth lawn of Washington square passed when one comes to these narrow by-ways of filth and noisome smells. Low groggeries and function shops abound. On every corner are groups of barefooted women and men, black and white, half dressed and drunken. Children play in the reeking gutters or lie on the dirty pavements, while their mothers sprawl on door-stoops or lean far out of the narrow windows.

Bulkley street is a narrow thoroughfare,

just wide enough for the loud mouthed venders of spoiled vegetables to drive through. Colored

people mostly live in this heat flue.

At 3 o'clock on a hot afternoon all the women of this alley seemed to be at their front doors.

Of babies and youngsters there is

no end. Everywhere were these little ebony toddlers. Sturdy little fellows played in the sun, while in the arms of many turbaned mothers were other little feeble ones gasping for breath. Here it is that scores of deaths are added to the mortality list during a heated spell. On two doors crape hung, and on the broken step next door to one of these houses lay a big, raw-boned fellow. The heat "had knocked him out," the neighbors said. His little girl pulled at his clothes and asked him to wake up, and a pet kitten crawled over him, but he slumbered on happily unconscious of his own misery. Bay street, almost opposite, is but another chapter of the same serial of misery.



A celebrity of the slums.



Sixth and Lisbon Streets.

Further down, say a square or more,

there is another still narrower alley. One can just spell the name of Lisbon street on the battered signboard that hangs awry from a tumble-down rookery on the corner of Sixth street. Here the architecture is of a character indescribable, and the denizens are in keeping with their homes. Negroes and Italians, Polish Jews and Hungarians, foreigners of every sort, sit in the narrow, broken doorways. In the gutters was a mass of filth and reeking garbage, and the smell of the closets was nauseating. Fat, bare-footed colored women sat on the pavements, and sewed or screamed to their numerous babies in the gutters or streets. Half a dozen little half-naked babies were eating a decayed watermelon bought at a cheap shop near by. The lowest form of vice runs riot here. Half clothed yellow women ogled sailors and longshoremen from the tumble-down rookeries. This is a blind lane, this Lisbon street, and the drunken rioter who enters here finds that, like the lane, he brings up at nowhere. Here it is that the police officers have much trouble, and at nightfall, when darkness settles down over this plague-spot, the vicious fight and carouse, and the tired poor crawl down the tottering staircases to sleep on the pavements or in doorways.

Hurst street, running a square, from Lombard to South, crosses this filthy lane below Sixth street. This street, too, is full from curb to curb with rotten garbage.

Below South street there is a narrow alley that runs through to Alaska street. Five feet wide cracks in the wall were full of washerwomen and babies, bad smells, hot stoves and ragmen's bags. On Alaska street, where for years hundreds of poor folks have existed in the broken-down wooden tenements, there were the same crowds of idlers. The same sort of babies

played games or slept in the enervating heat. Dark-browed men and women sat



Alaska Street.

about and jabbered in foreign tongues and filth and desolation was over everything.

In Spafford Street the climax of this misery was reached. Here hundreds of the Italian population are huddled into the stinking dens where the refuse of the great city is brought by the crippled and bent rag pickers. Italian women nurse their babies in the street. Half-clothed and barefooted are they, yet in their ears and on their necks is the tawdry jewelry so reminiscent of their home. Drunken garbage gatherers and ragmen gamble in



Spafford Street.

the low saloons, and fight for the smiles of the dirty black-eyed foreign girl, who

coquettes in barefeet and rags from the doorway.

Here are old-time archways, reminding one of continental cities, and in narrow courtyards beyond, where empty barrows stand and bales of dirty rags are piled, are crowds of children. A burly fellow with rings in his ears was combing the hair of a group of these juvenile lazzaroni, while their mothers disputed in the liquid patois of their native home. In one room, not six feet square and half-full of rags, seven of these children of misfortune spend those parts of their midsummer nights, which they do not spend on the pavements when the officers are not watching them. Five deaths took place in this narrow lane in the past few days, and the superstitious crowd talk with hushed voices as they pass the doors where the crape hangs. Tawdry lace curtains fluttered in the windows of these low-ceiled houses. On the bare and dirty floors of many of them little children are sorting rags and other refuse that was being brought in by other little ones no larger than themselves. The narrow pavements are impassable, for bales of rags and barrows are standing everywhere.

THE FOREIGN CENTRE.

Down about Carpenter street are other narrow alleyways where the babies play in the mud puddles. One little youngster, cleaner than his fellow-toddlers, was bathing in a wash-tub in one of the narrow byways that intersect this big district. Two baby coaches, rickety, to be sure, were on the shady side of this street, and in them were two sleeping babies with a ghastly pallor showing on their puny faces. Raggio's macaroni factory is the centre of this foreign populated district, and northward from it on Seventh street, a thousand like cases of squalor can be found.

On Seventh, below Bainbridge, there

is a tailor shop where ten men and women work in the heat.



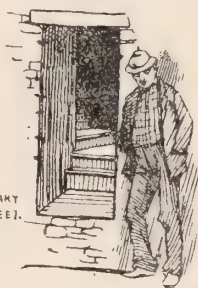
An Italian Mother.

May, June and Baker streets run off from Seventh westward. Here, indeed, is the paradise of dirty babies. No less than thirty youngsters sprawled

on the pavements of these sun-baked thoroughfares or scrambled between the legs of the idlers who thronged the street corners. Every Italian mother had a baby in her arms and three or four more tugged at her dirty skirts. Their fathers hung about the low grogeries or lay upon the cellar doors in the shade.

FAMOUS ST. MARY STREET.

Coming up town a square or two St. Mary street is reached and the notorious



"Ram Cat Alley" is found. Here, perhaps, is the filthiest, hottest and most depraved spot in all the slums. There is a house on this street near Sixth in which forty

families live. There is no door to this horrible place, but a little hole in the tumble down wall gives the drunken denizens of this loathsome place a chance to come out into the dirty world about them. This whole neighborhood is full of babies dying for air and sunlight, and clean food and cleaner mothers. Nothing can describe the smells that fill the air of this place on a hot afternoon.

It is in this filthy province that the twelve bunches of rusty crape tell the story of the mortality of the city's foreign population. Leaving all the dirt and misery and vice behind, a few minutes'

ride in the street car brings one to Chestnut street again, where the procession of sweltering humanity is en route to the seashore and the mountains. They, too, complain of the weather, but they do not think of the miserable thousands not a mile away. As they trudge along the heated flags there is a clang of an ambulance bell, a whirling past of a black wagon, bearing away another of the unfortunate outcasts who knew God's sunlight and air, but knew it only polluted with disease-breeding smells in narrow alleys and pest spots.

SIMON CAMERON AT 89.*

When the oldest as well as the ablest of the politicians of Pennsylvania returned from a recent trip to the Bermudas with Colonel James Duffy, of Marietta, and Mr. Larry Jerome, of New York, he complained that the place was "too slow" for him. "I am not a fast man," he explained, "but the trouble at Bermuda was that the newspapers were slow in coming, the steamers didn't run often enough and I could not keep track of what was going on in Pennsylvania."

Recently this hale and hearty veteran of 89 sailed for a pleasure trip in Europe accompanied by his two fast friends, "James" and "Larry." He is still as much interested in life as many a young man and still delighted "to see the world." All his life long Simon Cameron, the journeyman printer, who tramped into Harrisburg sixty or seventy years ago, with no worldly possessions save his wits and a small bundle of clothing which he carried under his arm, has had an advantage over most other men with whom he came in contact. He has been and is still a wonderful absorbent of information. He remembers accurately everything he reads and hears.

*From *The Philadelphia Press*.

At his Harrisburg residence, as well as at his Maytown home on the Donegal farms in Lancaster County, there are fine



Simon Cameron.

and well-selected libraries. One would hardly expect a man who long ago passed the term of life supposed to be allotted to mortals to have sufficient youthful enthusiasm to get interested in a love story. But there are very few first-class novels that General Cameron does not find time to read. He is as much interested in a prettily told tale of fresh young love as any college lad.

How does he find time to do all his reading?

It is true that he daily receives a very large number of visitors, but he has a knack of treating every caller well, yet disposing of him quickly, unless he happens to be some congenial spirit with whom he feels in the humor of chatting about matters and things. But no man ever did, or ever will, go away from General Cameron's curt, yet courtly presence, disgruntled, without good and sufficient cause. He has always been pre-eminently a manager of men. He has taken care to watch when the tides in public affairs were liable to rise, and when the ebb

came he was pretty sure to see its approach before most other people. This has been the secret of his political success. In speaking of his career in politics, he likes to-day to talk to his intimates in a strain something like this:

"People always said of me when I was in active politics that Cameron was a boss, that no man could be a candidate for office unless Cameron first selected him and gave him permission to run. This impression became so strong that aspirants for political preferment would come to me months before the primaries or nominating conventions and ask if they might have the office they sought, believing that my word of support was equivalent to an election. It wasn't anything of the kind, you know. I invariably answered such questions by asking the candidate: 'What is your strength?' or, 'How many delegates can you count on? Show me your figures and then I can tell whether I can afford to support you.' This I would say to all who came. Then when I found the man who was pretty sure to win with the little support I could give him, he was made the Cameron candidate. I got all the credit for the victory and the candidate himself believed that his success was entirely attributable to me. The truth of the matter always was that the candidate had the popular strength with him and without that I wouldn't and couldn't have been of much service."

The General's reading is done systematically, as everything else he finds to do is done, even to the sipping of his quart of champagne.

The Donegal farmhouse is two miles from Shock's Mills, the nearest railway station, and General Cameron's life there is comparatively quiet. He rises not later than 8 o'clock in the morning, and takes a light breakfast of milk-toast and

tea, which is sometimes increased by the addition of an egg or a chop of some sort. Then he repairs to the porch, and, seated in a big rush-bottomed chair with red painted woodwork, is prepared to receive the newspapers and visitors. The newspapers always come first, but are generally outnumbered later by the visitors. When 11 o'clock arrives the hour has come for wines. It is usually a quart of "Cliquot" or "Pommery Sec," and is taken with the relish of an expert. The old General is, by the way, getting quite chary in dispensing his wine to visitors. Formerly the caller was asked to share a portion of the bottle, and if one bottle did not suffice another quickly followed. Now the host, except on rare occasions, sips the bottle empty himself. The visitor is welcome to a dash of fine old brandy, a pint of burgundy, or a nip of ten-year-old rye, but he is seldom asked to take champagne. Lunch comes at noon and a nap of half an hour or so follows. Then the solid reading of the day begins. The reading is miscellaneous as well as solid. It is light if the humor happens to be on, or it is historical, political, philosophic or scientific. After a hearty dinner at 6 or 7 in the evening the General sometimes takes a stroll; occasionally a drive, though not often, as he keeps but one or two horses, and his equipages are not of a very elaborate or comfortable character, notwithstanding the fact that his check for a million dollars would probably be honored.

Another bottle of champagne comes in, frequently about 9 o'clock; there is a little light reading and some chat, and very shortly the General gets sleepy and retires for the night. As a rule he sleeps well, and it is an unusual thing for him to require the attention of a physician.

A year or two ago, however, the family was quite alarmed about him. On one

occasion he had retired for the night at his Front Street residence in Harrisburg and seemed in his usual health. Next to his bedroom and connecting with it is that of his son Simon, a man of forty years, of whom the public never hears because he has been weak-minded since his birth. During the night the father attempted to get out of bed to call for assistance, as he felt a peculiar sensation coming over him. When he moved from the side of the couch he fell heavily to the floor unconscious. Simon heard the fall and went into the room to discover the cause. Seeing his gray-haired father lying on the floor apparently dead, he became badly frightened. There is no telling how long the old gentleman might have lain there had not the housekeeper heard the disturbance and come to his assistance. Apoplexy was feared, but physicians, after an examination, decided that the fall resulted from a severe attack of vertigo. The patient was confined to his bed for several days, but was well enough next morning to give his son Simon a sound lecture. He has been in his usual health ever since.

"General Cameron," said an old friend to me, "is still as fond of a pretty female face as a boy of 20." He makes it a point frequently to have a number of handsome young girls and women about him, and is always vivacious and gallant in his demeanor toward them. This fact is chiefly interesting in that it illustrates a remarkable phase of his strong character. Notwithstanding that he has but eleven years to travel before reaching a century of existence, General Cameron seems, as a rule, to have no thought that it may be to-morrow or next week, or next year, that he may die. On one occasion, however, he did make an allusion to this subject in a very amusing way. Of late years he has taken great interest in

collecting relics of his early days, and has been very anxious to obtain an ancient picture of General Andrew Jackson. The picture is owned by a close personal friend, Colonel Jerry McKibben, who resides at Chambersburg, Pa. Colonel McKibben, by the way, is 90 years of age, but one of the halest and heartiest gentlemen of the old school who ever reached that advanced period of life. He is genteely fond of his game of whist and enjoys immensely a good story with it. When he and General Cameron get together they are like two colts. A few months ago the General invited the Colonel to come down to Harrisburg to dine with him. The invitation was accepted and the 90-year-old Colonel traveled fifty-two miles over the Cumberland Valley Railroad to take dinner with the 89-year-old General. After the meal had been served, and a tempting one too, it was, the General began to tease for the Jackson picture, but each request was refused.

"Oh, come now, Jerry," urged Cameron, for the twentieth time, "you won't be here long to keep it, anyhow."

The Colonel considered for a moment.

"I'll tell you what I'll do, Simon," he presently declared, with a great show of magnanimity, "I'll bequeath the picture to you when I die."

"Where the devil will I be then?" fairly roared the General. And then the two friskly young fellows had a hearty laugh over the joke.

IMPORTATION OF FOREIGN RAGS INTO AMERICAN PORTS.*

By F. S. WILSON, M. D., of Jarretstown, Pa., late
Lazaretto Physician at the Port of Philad'a.

The people of Philadelphia are to be congratulated in that the State Board of

*Read Before the Pennsylvania State Sanitary Commission.

Health, under whose auspices this Convention is held, selected this city for the holding of such an important Convention. Anything that concerns the public health is important, and any meeting or convention that has for its object the enlightenment of the public upon any matter or subject that ameliorates its condition while sick, or protects it from danger while well, is one that not only appeals to the highest intelligence, but the careful consideration of any community. Philadelphia, a city that long ago took the front rank in medical science, and still maintains it, by her encouragement and fostering care has been prompt in aiding all scientific enterprises; it is meet, therefore, that this Convention should be held within her precincts. The subject which I have been selected to discuss in this paper is "Importation of Foreign Rags into American Ports," and I would that it had been placed in more able hands. The subject is one of considerable interest to health authorities, and in the past has been the cause of much embarrassment to quarantine officers. More than a year ago I addressed a letter to the Secretary of the Treasury, giving my views upon the subject, and perhaps my position then will be better understood if I read the letter and reply in full:

JARRETTOWN, *March 17, 1885.*

HON. DAN'L MANNING,

Secretary of Treasury Dept,

WASHINGTON, D. C.

Sir: In view of the possible advent of cholera into this country this season, I would respectfully call your attention to the subject of rags from infected ports. It is a subject that not only concerns the public, but more particularly is it a cause of anxiety to all conscientious quarantine officers whose duty it is to protect the public from pestilential disease. Last season in the exercise of my duties as Lazaretto Physician for the port of

Philadelphia, I had little to fear from this source, from the fact that we had very little shipping from any of the infected ports; and as cholera did not appear in France until the 10th of June, and the subsequent order of your predecessor, the late Secretary Folger, placing an embargo for three months on the importation of all rags, left us little to fear for last season. But this season the conditions and circumstances governing the case will be quite different; the collectors of rags in France, Italy and Spain whence cholera appeared last year will have had ample time to collect them and get them baled preparatory to shipment. To stop the importation of rags for a limited time does not solve the difficulty nor avert the danger; for it is a mooted question with medical men and sanitary experts, how long the germs of disease may remain active in rags or any other nidus, and while they may not agree as to the exact time the poison continues to be virulent, I believe they all agree that its potency is not lost under a year. To stop the importation of rags for a long period would seriously cripple one important branch of commerce and greatly interfere with a large industry in this country, that of paper-making. To overcome this difficulty there should be some feasible plan whereby all interests could be subserved, and I think there is; and hence would respectfully suggest that an order might issue from your department to all U. S. Consuls and consular agents abroad that no rags could be shipped to this country from countries where cholera did exist or had existed last year, unless they bore a proper and legal certificate from the above officers that they had been thoroughly and effectually disinfected, or what in my opinion would be much more preferable that they had been reduced to pulp before they were shipped. The rags that are imported are used in paper-making and if they were reduced to pulp before being shipped, the reduction would most effectually destroy all the germs of disease that they might contain and not interfere with the object for which they are imported, and the cargo become as harmless as one of iron or stone. To have them disinfected after they reached this country would entail considerable labor as well as

expense. They are shipped in bales, tightly compressed, each one weighing from four hundred and fifty to five hundred pounds; these bales would have to be undone to be properly disinfected, and various places would have to be established in this country for disinfecting purposes. I think the most feasible plan would be to compel the shippers to have them reduced to pulp before they are shipped to this country.

All of which is respectfully submitted.

F. S. WILSON,

Lazaretto Physician.

Jarretttown, Penna.

TREASURY DEPARTMENT,

Washington, D. C., March 23, 1885.

DR. F. S. WILSON, *Lazaretto Physician*,
JARRETTTOWN, PA.

Sir: In reply to your letter of the 17th instant, I enclose herewith a copy of this department's circular of December 22d, 1884, which prescribes the mode of disinfecting old rags imported into the United States, and have to state that should a modification of such instructions be deemed necessary at any time the suggestions contained in your letter will be duly considered.

Very respectfully,

CHARLES E. COON.

Assistant Secretary.

Since then the Treasury Department, believing that the question belonged to the local health authorities exclusively, has divested itself of the puzzle and thrown the responsibility entirely upon the latter. Since writing the above letter, in a conversation which I had with a paper manufacturer, he took the view that if rags were reduced to pulp before being shipped it would destroy them as an article of commerce. However that may be, from such *ex parte* evidence, I am not prepared to say; but I do know that such a process would render them entirely safe, a consideration not unworthy the best thought. Cargoes of old rags have always been looked upon as suspicious in European ports, and now,

when we know that cholera has raged in portions of Europe for the last two years, that suspicion deepens here into the conviction that such cargoes, without disinfection, are unsafe and should not be received into American ports. Whether cholera is dependent upon the comma-bacillus of Koch, or the bacteria of other investigators, I am not prepared to say; nor do I care, believing that this is not the time nor place for such discussion. It is not my purpose to deal in glittering generalities, or to weave fine spun theories in regard to the etiology of this disease, leaving for others the task of clearing away the mist that surrounds its cause at present, and to content myself with trying to prevent its introduction into this country.

But if we are to accept the germ theory of this disease which at the present stage of scientific experiment seems to be the most probable, then we know we have in rags a most convenient as well as efficient vehicle for the transmission of such germs. In further illustration of this point let me here relate what occurred in my own private practice more than a year ago. I was attending a case of malignant scarlet fever in a child, whose mother at the time was also sick of a non-contagious disease and who subsequently died. Two months after her death there was held a public vendue on the household goods and effects, and among other things sold were some unsewed carpet-rags which were purchased by a woman living two miles distant; shortly after this purchase she sewed the rags together, her two little daughters assisting her and in a few days thereafter, both children were taken with scarlet fever, the elder of the two recovering while the younger died in less than twenty-four hours; a few days after this death another child, a boy fifteen years old took the disease and died in twelve hours.

There were no other cases of scarlet fever in the neighborhood, and there had been none for a long period when this first case occurred, and there had been no communication between the children of the two families; and therefore the appearance of the disease in the second family, I think, was clearly traceable to the infection held in the carpet-rags. Now, if such a condition is possible in a few carpet-rags, is it unreasonable to suppose that a similar condition might not exist in a cargo of rags? Rags have a commercial value, of which I am not unmindful, and for the following data I am indebted to the custom house records. For the year 1885, there were brought into Philadelphia one million six hundred and fifty-nine thousand, three hundred and forty-seven (1,659,347) pounds of rags (not woolen) carried as freight, whose valuation was forty-eight thousand, nine hundred and fifty-six (\$48,956) dollars; but this valuation is small compared with the commercial loss this city would sustain if visited by an epidemic of cholera; for such loss, even in dollars and cents, not saying anything of the loss of life, would not be measured by thousands but millions, and who would be able to calculate the withering influence of such a blight, or estimate the wide-spread misery and desolation that would be left in its wake. Far be it from me to say one word or do one act that would in any way cripple the commerce of this port, or paralyze any branch of it, for pride for my native city, if guided by no higher motive, would preclude the possibility of such action; but if I am called upon to choose between the annihilation, if need be, of one branch of commercial industry and the protection, welfare and safety of nearly a million of people, then I have no hesitation in declaring publicly that I am for the safety of the people first, last

and all the time. The health and safety of the people are paramount to everything else, and it should be the first consideration with all boards of health, health officers and quarantine officers to keep this steadily in view, and so execute the health laws to meet this end. A board of health is nothing if not positive. A quarantine officer also is nothing if not positive. Health laws generally are stringent, and made for the benefit of the people at large, and must be executed fearlessly, though minor interests suffer. But it does not follow from this that determination cannot be coupled with civility, that decision cannot be rendered without giving offence, that maintenance of the law cannot be had without the loss of gentlemanly instinct.

This question of the importation of foreign rags into American ports must be met and met boldly too; and now, it is no time to delay in the matter, there is no half way ground, we must either admit them under restriction or exclude them altogether. What is the remedy? Speaking from the standpoint of a quarantine officer, I would say admit them under certain limitations and restrictions, which it is the right and bounden duty of the health authorities of this country to impose, and if the shippers of these rags will not conform to this rule, then I would exclude peremptorily from every American port every pound of rags. The question will be asked, perhaps, of what are these limitations and restrictions thus imposed to consist. I answer, thorough disinfection of the rags before being baled and before being shipped by such processes as the health authorities of this country shall prescribe. Happily the Board of Health of Philadelphia has recently passed a resolution embodying the points which I have just been considering, and so long as I shall have the

honor to represent Philadelphia in my present capacity, it will not only be a pleasure but I will consider it my imperative duty to enforce that resolution without fear or favor. It is to be earnestly hoped that every Board of Health in the United States will take up this subject and treat it in the manner in which the Philadelphia Board of Health has, so that there will be co-operation all along the line, and that harmony of action upon it which its importance demands. In the performance of sanitary work we need the encouragement and co-operation of the people and no matter how difficult the task, how heavy the burden or how great the danger, if we know that the people are with us in invoking the majesty of the law in upholding our authority, it lessens the task, lightens the burden and conceals the danger. One can appreciate the responsibility a quarantine officer assumes when it is considered that he stands as a wall of fire between pestilence and the population of a large city; but even this responsibility becomes less irksome when he knows that the people are back of him, ever ready to uphold him in the prosecution of a good work. And here let me say, if you will pardon the digression, that too much praise cannot be given to the State Board of Health for the pains and care it has taken in getting up this convention to familiarize the people of this city with sanitary work.

So also is much credit due the Philadelphia Board of Health for instituting that house to house inspection last year, and whose order in reference thereto was so faithfully and fearlessly carried out by her efficient health officer, re-enforced by the scientific and chemical knowledge of her learned Port Physician; the work was well conceived and well executed, and will no doubt result in lessening the number of cases of zymotic disease.

THE CELLAR IN SUMMER.

At this season (truly says *The American Agriculturist*,) the cellar must be kept cool, dry, ventilated and clean. The doors must be kept closed as much as possible during the day, but they may be opened about midnight, and remain open until early morning. During the latter half of the night the air is cool, and air must be admitted to keep the cellar dry and pure. If kept clean, not a great deal of airing will be needed. If the cellar is damp, fruits and vegetables decay sooner, and it is more unhealthy than is generally supposed. Many attacks of fever, diphtheria, or other diseases, result from damp, unventilated, unclean cellars. Keeping the cellar clean and ventilated, is the best way to keep it dry; it may be necessary to use other means. Lime placed in the cellar will absorb moisture and noxious gases, and thus help to keep the air pure. Charcoal is also a great absorber of gases. The temperature of the cellar may be lowered by putting a tub of broken ice and salt in it. The rapid melting of the ice cools the air. This will be convenient when a considerable quantity of fresh meat or fruit is to be preserved. It is impossible to keep the cellar in good condition unless the drainage is efficient, and there is a proper arrangement of doors and windows. Double ones are needed to keep the temperature at the right point in summer as well as in winter.

THE NEW LAZARETTO PHYSICIAN.

Governor Beaver recently appointed Dr. H. B. Brusstar, of Birdsboro, Berks county, Lazaretto Physician in and for the port of Philadelphia, vice Francis S. Wilson, resigned; and Robert M. Newhard, a druggist of Fernwood, Delaware county, to be Quarantine Master.

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Editorial.

FOOD PRESERVATIVES.

One of our readers sends us a flaming circular setting forth the merits of an article that is being sold for the purpose of preserving from decay various articles of food, and he asks our opinion as to whether or not it is a harmless article to use. The circular states that the article in question is composed of pure table salt and salicylic acid, and states that many eminent chemists and physicians have pronounced this article "a perfectly safe and harmless preparation." We would say, in answer to our inquirer, that if he wishes to use any preservative, the one in question is probably as harmless as any that he can use. A recent French commission has decided the hygiene of salicylic acid in beer by saying, that while they are not prepared to assert its injuriousness, yet it is their sense that a manufacturer has no right to put this article in the beer to be consumed by another man without making him aware of its presence.

It is our opinion that the danger to health lies not so much in the preservative used, as in the fact that preserved foods are used at all. In the cycle of nature's changes, it is intended that that which has once had life shall contribute life to that which lives, and shall do so very soon after its own life has departed. It seems to us like an effort to thwart the intentions of nature when one tries to nourish a human being on organic matter that has been for a time deprived of its life, and prevented from undergoing the retrograde metamorphosis to which all organic matter is predestined, by the artificial efforts of man. To us such a spectacle would seem comparable to a feast of *mummies* among the cannibals. We have not yet the data to absolutely prove our position, but we have always felt that nature intends that men and women shall eat that only which the particular clime and season will produce. The practice of keeping that which nature produces in August to be consumed in December has always seemed to us erroneous. Of course, we do not here have reference to such articles as the cereals, that keep of themselves, but are only talking about those food products that require the art of man to keep them in a fit condition to be eaten. To carry out our idea, it would seem to us that coffee would be much more wholesome for the inhabitants of the South American countries where it belongs, than when consumed by us for whom nature has not provided it; so also would the use of tea be thus restricted to the inhabitants of China. Strawberries, we would say, should be eaten in June and July, in this clime, and not (mixed with sugar, salt or salicylic acid) in December.

Peaches in August and not (with brandy or sugar) in January. Of course, potatoes, corn, wheat, beans, etc., keeping,

as they do, naturally, may, and are, no doubt, intended to furnish nourishment at any and every season of the year. Here then we object to food preservatives from one point of view. This objection is based, we admit, merely upon a sentiment or idea, the correctness of which we have no means at present of determining. But there is another objection which we *know* to be a real and valid one. We know that it is not an uncommon practice for those in business to select meat that has passed its day of *freshness*, for purposes of *corning*, and preserving in the various ways that preserved meat is offered to the public as a food. Of course, such meat cannot make good nourishment, yet every means of preservation that is afforded makes only more easy and more general this terrible crime against the health of the people. Do we mean to say that corned, dried, smoked, potted meats and so on are enemies to health? We do most emphatically mean to say that all such articles are, to say the least, very much inferior to the fresh article as a nutrient, if they are not, indeed, absolutely injurious to health. We all know that an excess of preserved meat will cause scurvy; and can we then say that an amount short of this excess, which makes itself apparent by outward manifestations, is not, all the same, working an injury to the human frame, even though this damage may not be visible to the eye? The idea we had in mind in making this answer to our correspondent was that *preserved* products of nature are not fit for human consumption, and that on this ground and for this reason we would condemn the use of all preservatives as enemies to health and injurious to mankind.

Notes and Comments.

A KING'S HORROR OF SMOKE.

King Ernest of Hanover, uncle of Queen Victoria, who ascended the Hanovarian throne on the same day as his niece became Queen of England, could not endure tobacco, and his dislike of it was such that his private secretary, General Von Düring, who was a slave to the habit, as most military men in Germany are, was put to the most severe and laughable straits to indulge it and yet not to offend the King.

Half-past nine was the General's hour of morning attendance. Five minutes before that time four servants stood in the passage leading to the ante-room. One held an old horse-soldier's cloak with a slit behind; one held a red-hot shovel with a long handle like a warming-pan; one held a decanter of water and a glass and a bottle containing a colored liquid, and one was there to hold the papers and to take the pipe, which the General smoked down the passage to the very last moment. No. 1 covered the old Secretary's shoulders with the threadbare and stained old cloak, which had gone through the Peninsular War and which was now buckled tight around the neck. No. 2 poured some incense into the hot shovel and inserted it between the General's legs through the slit behind. The process continued for a minute or two and the old man was nearly stifled, but only impregnated. Then No. 3, from decanter in hand, poured out a glass of water, of which the General took a hearty gulp, rinsed his mouth out and spat it out on the carpeted floor; then he threw off his cloak, seized his papers and letters from No. 4 and rushed steaming into the King's presence as the various clocks struck the half-hour.

AN UNEXEMPLARY CENTENARIAN.

Whenever a centenarian is discovered (says the *London Standard*,) there is a rush of fadmongers to find out what mode of life the subject has followed. Had vegetarianism anything to do with it? Was the man or woman, as the case might be, a total abstainer, and was he or she married or unmarried? Did it seem likely that any habits or exceptional temperance in eating, drinking, or what not, had helped to bring about the result, and—a great point for the vendors of patent medicines—could it be shown that anybody's pills had sustained health? Investigators into the case of Mary Hodges, of Elton, Hunts, who attained her hundredth year during last week, will be disappointed if they seek to prove that she was a person of what is regarded as a model dietary life for a lady. Only two facts are stated about Mrs. Hodges, and these are that "her favorite beverage is rum and she is an inveterate smoker." When a woman in Mrs. Hodges' station of life smoke at all they smoke pipes, and probably do not consume the most mild and delicate Turkish growths; but rum and bird's-eye—if it be not shag tobacco—cannot have injured Mrs. Hodges' health. Doubtless, at the same time, rum and smoking have killed many other people who have not drunk or smoked to what would be generally looked on as excess. Mrs. Hodges' longevity merely goes to prove that some people can do with impunity, and even possibly with advantage, what would be dangerous, or, perhaps, fatal to others—that, in fact, "what is one man's meat is another man's poison."

HE WOULDN'T BE VACCINATED.

The steamship *Earnmoor*, Captain Richard Gray, from Santiago de Cuba, arrived

at the Lazaretto Station down the Delaware recently and when the Lazaretto Physician, Dr. H. B. Brusstar, inspected the vessel, and found that she was from an infected port, he directed that all of the crew, under the rules of the Board of Health, would have to be vaccinated. The Captain ordered the men to submit to the Lazaretto Physician's orders, but several of them positively refused to be vaccinated under any circumstances, and threatened trouble if an attempt was made to enforce the rule. Dr. Brusstar immediately telegraphed to Lieutenant Francis, of the Delaware Harbor Police, and the tug Samuel G. King steamed down the river to the Quarantine Station. On arriving there he found that all the crew, with one exception, had undergone the treatment of vaccination. The man was transferred to the police tug and brought to this city, where he was locked up to await the action of the Health authorities.

At a meeting of the Board of Health a communication in reference to the matter was received from Dr. Brusstar, in which he said that he would have detained the man at the station "but we have no place that would hold him. He looks like a desperate fellow, and if there is any law to punish him, you ought to make an example of him."

The Board directed Health Officer Patterson to have the man detained in prison for five days as a punishment, and not to allow his release until he submits to vaccination.

UNHEALTHY PUBLIC BUILDINGS IN WASHINGTON.

From the report of a recent Grand Jury it appears that the sanitary condition of the Treasury Building, the Patent Office, and the General Post Office is very bad indeed, owing to defective sewerage and ventilation, etc., and that this is a source

of real and constant danger to the lives of those who work in those buildings. In fact, the health of the Department officials and clerks is much below the average, as a rule, and this is undoubtedly the cause of it. The new building of the State, War, and Navy Departments is the only public building in Washington that is constructed properly in these respects.

The other three great buildings, mentioned above, are irremediably defective, and the new Pension Office is also considered unhealthy. The Capitol itself, while an admirable building to the eye, architecturally, is miserably ventilated, as every one knows, and is so constructed that the defect cannot possibly be remedied. The Capitol, however, will have to remain as it is; but the proper thing to do in other cases is to let the old buildings go as incorrigible, and to erect new ones of the most approved modern type, either on the present sites, or on the south side of Pennsylvania avenue, between the Capitol and the White House, as has been often proposed. To persist in using the present buildings, under the circumstances, is little short of criminal.

WAS THE HOTEL PROPRIETOR A MURDERER?

A loving father who, at a summer resort last season, had left behind him four beautiful children, dead of diphtheria, said to a physician, "That hotel proprietor was as much of a murderer as if he had shot my little ones." "Yes, dear sir," was the reply, "but you, the guardian, ought to have been armed and equipped against such foes. An hour's intelligent examination of water supply and drainage at a proposed country home would in a large majority of cases prevent the risk of such catastrophe, and might be made before a landlord could object. Take in the dressing-bag an

ounce vial of saturated solution of permanganate of potash, which any druggist will prepare for a few cents, and put half a dozen drops into a tumbler of the drinking water that is supplied. If it turns brown in an hour, it is, broadly speaking, unfit to drink; if not, it is not especially harmful. If a country hotel's sewage system is confined to cesspools within a hundred feet of the house, and near the water supply, take next train to a point further on. These matters should force themselves on one's personal attention, quite as much as the undertaker's bills that occasionally follow their neglect."

HOW HE LOOKED AFTER A BURIAL OF 600 YEARS.

The London Correspondent of the *Phila. Times*, writing of Westminster Abbey and its occupants, says: "In 1880 the stone coffin of Edward Longshanks was opened. Strangers are not admitted to chapels while tombs are open, but I bribed the verger with a half crown. For almost six hundred years the Crusader king had lain there, but as the place was perfectly dry and the body never reached by the air, the remains were remarkably well preserved. They had been embalmed and were wrapped in white silk, without armor or royal insignia of any kind. The hands had been folded over the breast, but the fingers had fallen away to the wrists. At the farther end of the shriveled limbs that earned for their owner the name Longshanks were the partial remnants of feet, but six centuries of crumbling had left little above the ankles, while two small piles of white dust on the coffin bottom showed what had become of the wasted feet. The trunk of the body had fallen in, but the face still bore a human expression, save the staring holes where were once eyes. The hair had fallen off

and the skull was perfectly white and smooth. Around the head was a silver band as thick as a ten-cent piece and five-eighths of an inch wide. I examined the band closely, but could find no marks of any kind upon it. A few days later the coffin was again sealed and Edward began another six-century rest."

POISONOUS COLORING.

The Board of Health of this city recently declared as nuisances the use of any of the following substances as coloring matter or for other purposes in articles of food or drink:

Blue vitriol, puce, king's yellow, chrome yellow, Turner's yellow, cadmium yellow, Turpeth mineral, citron yellow, chrome zinc, Naples yellow, yellow ochre, mosaic gold, orpiment, Paris yellow, menium, red lead, vermilion, purple red, iodine scarlet, realgar, collalhar, rouge, red ochre, crocus, chrome green, Remner's green, mountain green, Paris green, Scheele's green, verdigris, emerald green, Schweinfurth green, mineral green, Brunswick green, aqua-marine, mountain blue, Prussian blue, Antwerp blue, soluble blue, umber, sienna, Vandyke brown, chrome orange, Kermes' mineral, and all colors not herein mentioned, containing or liable to contain appreciable quantities of arsenic, antimony, mercury, lead, copper, tin, zinc, barium, cobalt, cadmium or bismuth.

The Health Officer was directed to prosecute any and all persons using any of the ingredients named.

ECONOMIC SANITATION.

According to the report of the Wisconsin State Board of Health a curious effort at compromise, "in the interest of economy," was made by the Board of Health in a town of some 1,200 inhabitants in the southwestern part of the

State. The Health Officer's compensation was fixed at "the rate of \$3.00 per day for the time actually spent in the service, provided, however, that the whole amount to be paid during the year should not exceed \$15.00." This remarkable management did not effect the saving that was designed and expected to result from it. Diphtheria broke out in the town at a time when the appropriation was exhausted, and the Health Officer declined to work without assurance of payment; this was finally given, whereupon energetic measures of quarantine were enforced and the disease was promptly stamped out. The cost of so doing was very much beyond the limit set by the economical Board at the beginning of the year, notwithstanding which the expenditure was one of the best and most profitable that could have been made.

PURE MILK DEFEATED.

Dr. J. Cheston Morris was the author of a bill before our recent Legislature providing for the appointment of milk inspectors, punishing adulteration and dilution and generally regulating the traffic in this vital article. The bill had the endorsement of the State Board of Health and of all our leading medical societies, yet it failed to become law. Dr. Morris now explains that the bill was defeated by the influence of the milk dealers. This fact is the strongest possible argument for its enactment by the next Legislature. The fact that the dealers were against the bill proves conclusively that the evils which it sought to correct are real, and it also demonstrates that the integrity of a portion at least of the dealers is not above suspicion, which makes it imperative that they should be stopped by law from going about sowing the seeds of disease and death.

RETIRING CLOSETS WANTED IN FAIRMOUNT PARK.

Communications received since the Fourth of July (says *The Press*), when more than 60,000 people filled Fairmount Park for hours together, call attention to one grievous oversight in the furnishing of our Park. There was music in abundance, all the fresh air, foliage and natural beauty that men, women and children could desire, yet the Park failed to give many the satisfaction that it should, solely from the lack of retiring closets in suitable locations and in sufficient numbers. The Park Commissioners should remedy this defect promptly. Central Park, in New York, shows in this respect far more intelligent management than our own. The Park can never be the success it ought as a popular resort unless it is made convenient in all respects for the people who visit it.

THE BAKER THAT NEVER USED EGGS.

It was testified to by an apprentice of one of the bakers whose buns, made yellow with chromate of lead, had caused the death of several customers, that his employer *never used an egg*, during the four months that he had worked with him. Since our last issue, the bodies of several persons, whom, (in the light of later developments,) it was supposed might have been poisoned by these buns, have been disinterred and subjected to careful examination, and evidences of lead have been found in the remains. From the Coroner's inquests, it seems to be definitely settled that very many bakers in this city have been in the habit of using chromate of lead instead of eggs to give a yellow color to their pastry, and God alone knows how many murders have been thus committed.

ILL HEALTH HANGS ON DISHONESTY.

I said recently to a woman (says a writer in the *Anti-Adulteration Journal*), who lost her child with diphtheria while she attended a church service a mile away, "Madame, you ought not to leave that child for a moment." "Ah, sir!" was the reply, "but I fear his illness is a visitation of Providence on me for having neglected to pray enough." I said, "Do you think God carries the virus of diphtheria and smallpox and typhoid fever about, and inflicts it on innocent babes, when their parents do not sufficiently honor him? The cause of diphtheria is in your ignorance and filth. Your sewer is neglected. You have rotten vegetables in your mouldy cellar; you neglect personal cleanliness, and cover it up on Sunday with finery. Your child is sick because you lack honesty in everyday small affairs. One-half the sickness of any family, and of all the people, hangs on dishonesty."

THE TERRIBLE SLOP BARREL.

Some friends recently went to pass the summer at a river resort. The mother of the family stepped off the boat on her arrival, "a buxom lassie," who tipped the scales at 165 pounds. After a time the husband writes to us that his wife has lost twelve pounds, has no appetite, and seems generally "broken up;" many of the boarders says she has *malaria* and want her to take quinine; what shall we do?" She did have the results of *slop-aria*, for beneath her bed-room window was the boarding-house slop-barrel, and she was continually breathing these delightful emanations. At noon of a certain day this barrel was removed, and at three o'clock of the same day, the commencement of the improvement in this lady's condition was noted. MORAL: Always have your eye open for your surroundings.

CONVICTS AVERSE TO BATHING.

One of the excellent provisions of Sing-Sing (N. Y.) Penitentiary is that every prisoner is obliged to take a bath once a week.

"This one of the features of prison discipline," said the chief keeper, Mr. Connaughton, recently (to a correspondent of the *Phila. Times*) "to which many convicts tackle unkindly. Most of them are anxious to work, and a long period of enforced idleness makes every man of them so blue that he would work fourteen hours a day if we would let him. But when it comes to a full bath once a week there is frequently a kick. I think I have had to inflict punishment for refusing to bathe more than any other breach of discipline." This is another straw in support of the argument we have advanced that hygiene and crime are antagonistic, that a sanitarian cannot be a criminal.

A LIGHTNING-LIKE EATER
AT WORK.

The *Atchison* (Kansas) *Globe* says that: "one of the Talifero boys, living near Effingham, recently made a bet that he could kill, clean, cook and eat a spring chicken in fifteen minutes. Preparatory to the contest he secured the chicken and provided himself with a pot of boiling water, a bucket of cold water, a hot skillet and a hot flat-iron. When time was called he jerked the chicken's head off, doused it in a pot of boiling water, slipped the feathers off, cleaned it, and then laid the fry flat in the pan, with flat-iron on top to cook the upper side. At the close of eleven and a half minutes he had the chicken's bones beautifully polished."

The report is silent as to the after-effects and we are at liberty to draw our own conclusions.

SWEATING FEET.

In the experience of the editor of the *Journal of Cutaneous and Genito-Urinary Diseases* in the treatment of habitual sweating of the feet, the best results have been attained from the employment of foot-baths of a strong solution of extract of *pinus canadensis* (Kennedy's) every night, and the use of powdered boracic acid, or salicylic acid mixed with lycopodium, oxide of zinc, or other inert powders, constantly applied inside the stockings. Hebra's treatment with diachylon ointment undoubtedly constitutes a most efficacious method, but the inconveniences attending its application, often temporarily interfering with the occupation of the patient, renders its employment impracticable in many cases.

A WARNING ABOUT SEWERS.

Dr. J. W. White (of this city) very truly says that in our older cities much municipal improvement is often hampered by the imperfect manner in which public work is done. In the particular case to which he refers, the residents of a certain section of our city desired to macadamize the small street back of their houses, but upon examination it was discovered that the old, pre-hygeian sewer was so defective in construction that a subsequent tearing up of the street would be necessary when the city got ready to give them a decent sewer. It would be well for our newer cities and towns to bear this incident in mind and remember that what is worth doing at all is worth doing well.

* HYGIENE VERSUS MEDICINE.

The development of sanitary science, says the *Saturday Review*, has advanced with rapid strides during the last three decades. Thirty years ago it scarcely had an existence. Our diminished rate

of mortality is due to a greater extent to this cause than to improved methods of treatment of diseases. We put this out, not with the intention of sneering at the anxious and too often thankless work performed by our doctors, but to accentuate the fact that preventive medicine is more powerful and far reaching in its effects than the endeavor to cope with disease. Not only is "prevention better than cure," but it is also easier.

AMERICAN ATHLETES ABROAD.

S. H. Young, Jr., the champion hurdle racer of the Manhattan Athletic Club, of New York, recently competed in a hurdle race in England. He led half the way and then collapsed, failing to get a place. Young says in explanation of his defeat that he was not in condition. During his voyage from New York the weather was bad and he suffered from seasickness, rendering him unfit for racing. This may be so, but we cannot help but feel that this collapse means serious future physical consequences to the champion. If we must have hurdle races, why not let horses do the jumping? Such exercise certainly cannot but prove more or less injurious to the vital organs of man.

BISMARCK'S HALLUCINATIONS.

Bismarck, like many other men whose brain is abnormally active, is sometimes subject to vivid hallucinations on sleepless nights. One morning he said: "Last night for the first time in a long period I have had a few hours of refreshing sleep. Ordinarily in sleep my mind is occupied with all manner of thoughts and anxieties. Then Varzin suddenly appears to my vision, perfectly distinct down to the minutest detail, just like a large picture with all its colors the green trees, the rays of the sun on its smooth bank, and the blue sky over all.

It is impossible, notwithstanding all efforts, to escape this apparition."

HE NEVER CHEWED AGAIN.

John Smith, familiarly known as "She-moke John," formerly of McCalmount township, Richmond county, Virginia, now deceased, was a great tobacco chewer in his day. He would bite off a chunk as big as an elephant's ear and twist it around in his mouth with great satisfaction. One day while mastering a fresh invoice of plug he noticed that it produced a peculiar crackling and grating sound and tasted nasty. He looked at the plug and saw that a mouse had been imbedded in it, and that he had bitten it in two, and had half of it in his mouth at that moment. That was his last chew of tobacco.

THE HEALTH OF PHILADELPHIA.

Health Officer Patterson said, recently, that the health of the city is better than it has been for years. The excessively hot weather has increased the mortality among infants from 40 to 60 per cent. greater than in July last. He considers the garbage nuisance greater than ever before. The improved health of the city he attributes to a more perfect system of drainage.

The Master Plumber's Association requested the Board of Health to enforce the rule which requires the architects or owners of new buildings to file the plans of plumbing with the Health Bureau.

THE PLAGUE IN CHINA.

The Steamer *Gælic*, which arrived at San Francisco on the 2d August from China, brings the news that a terrible plague is raging at Nanking. People are dying in every quarter, and there are many instances of very sudden deaths.

People are apparently well in the morning and dead in the afternoon. Over 1000 telegraph poles belonging to the Munanan Mingtaz District and Kweichow Lane Line have been pulled down by the people, who say the telegraph is a diabolical European artifice. Troops to the number of 2000 have been ordered to the spot.

NEW YORK'S LIQUOR.

Though hard to credit, yet is our duty to report that the *New York World* announces as the result of its analytical investigation, that the charges of liquor adulteration in New York City are not well founded. It states that comparatively little adulteration was detected; there was a little fusel oil in all the samples, but not in sufficient quantity to be harmful. It claims that "rot-gut" is unknown, even in the humblest grogeries; and while it does not, of course, advocate the use of liquor, it yet issues a clean bill generally for the liquor trade, so far as adulteration goes.

HE SOLD CHEAP BUNS.

By substituting chromate of lead for good eggs, Baker Schmidt was able to sell fourteen bright yellow buns for ten cents, says the *Press*, but the poor people who bought them have found them terribly expensive. The men and women with wrecked constitutions and desolated homes who told the Coroner's jury, recently, how they were poisoned by Schmidt's buns presented in their simple story a terrible indictment against the baker and the men who sold him poison, knowing that its use in food meant sickness and death.

PRIVY VAULTS.

This is the season of the year when privy-vaults become offensive, and when,

if we are not careful, they will prove the breeding ground of disease. A small quantity of chloride of lime, upon which may be poured a few drops of muriatic acid, thrown down the vault every few days, will not only destroy the germs of disease, but will also do away with the offensive odors that otherwise would be wafted in through your open windows. Chloride of lime is cheap, and should be liberally used in this hot and *decomposing* weather.

CHANCES FOR LONGEVITY IN FRANCE.

M. E. Levassur, of Paris, shows that the chances of living long at any given age are much greater now in France than they were before 1789. Of 2000 infants, under one year, 1189 survived in 1789; 1460 survive at present. In 1789, 783 persons out of 2000 reached the age of forty; the number now is 1110. In 1789, 144 persons out of 2000 lived to the age of seventy-five; the number now is 360. The death-rate of France is much the same as that of England, being rather superior at some ages and inferior at others.

HIRING COFFINS.

According to *Frank Leslie's Weekly*, it is the custom among the poorer classes in Panama to hire coffins to transport their dead to the grave, after which the body is deposited in the earth, and the coffin brought back with the mourners. The following is the form of a Panama undertaker's advertisement.

"From this date hearses will be hired from our establishment at the following rates: \$2, \$5, \$15 and \$20. Coffins will be sold at lowest possible rates. Coffins hired out for ONE DOLLAR, including bench on which to carry deceased to the grave."

APOPLEXY IN BORDEAUX.

The London *Medical Record* says that there are more deaths from apoplexy in Bordeaux than in any other city in the world, and it attributes that fact to bibulous habits of the Bordelais. It seems that Bordeaux is given to wine-bibbing to an extent which produces an abnormal amount of disease of various kinds. It might have been supposed that Bordeaux drank pure wine, but such is not the fact. There is quite as much adulteration of wines intended for home consumption as of those sent abroad.

SMALL-POX IN WISCONSIN IN 1886.

During the year twenty cases occurred in six distinct localities, according to the report of the State Board of Health. Here were the nuclei for an epidemic that might have ravaged the State. But in each instance prompt isolation of the infected, quarantine of the exposed and general vaccination stayed the progress of the disease. This is a gratifying record and speaks volumes for the efficiency of the public health service of Wisconsin.

GALVANOPLASTY.

Instead of either ordinary inhumation or embalming, one Kergovatz proposes to replace these methods by galvanoplasty. After having covered the subject with a layer of plumbago, it is immersed in a bath. Copper being expensive, zinc may be substituted for those who are poor. On the other hand, gold or silver is used for the rich. It has been suggested to prolong the bath, and thus have our friends transformed into statues of natural size.

FOOD THAT MAKES BRAWN.

The girls at Vassar, according to the just issued report, ate during the term just ended, 84,000 pounds of fresh meats, 8000 pounds of smoked meats, nearly 5000 pounds of turkeys, over 4000 pounds of chickens, nearly 4000 pounds of fish, 32,000 clams, 141 gallons of oysters, 230 barrels of flour, 14,000 pounds of butter, 95,000 quarts of milk, 25,000 pounds of sugar, 30,000 oranges and lemons, 10,000 bananas, over 1000 bushels of potatoes, and 100,000 buckwheat cakes.

ENFORCING ECONOMY OF WATER.

A law has been recently enacted in New York State which practically means that

TYROTOXICON IN CREAM PUFFS.

Two ladies were recently seized with convulsions in this city; and it was, at first, supposed they were poisoned by some adulteration in cream puffs which they had eaten. An examination of the puffs, however, has induced Dr. Lawrence Wolff to attribute the sickness to the development of tyrotoxon in the custard. In a late issue we pointed out how such accidents may be avoided, and as such events are liable to visit any household at any time, it becomes really suicidal folly not to heed these warnings.

THE RETORT COURTEOUS.

Bishop White, of Pennsylvania, was sitting one day at dinner with that bold financier of the revolutionary times, Robert Morris, when the latter said:

"Bishop, I have made my will and have devised to you all my impudence."

"In that case," replied the bishop, "you have certainly left me the greater part of your estate."

"Yes, bishop," interposed Mrs. White, "and it is plain that you have entered immediately upon your inheritance."

the people shall be limited in their use of water. We are sorry to chronicle this fact. Waste of any kind is to be deprecated, but, if it is anywhere excusable, it is in the use of water. Of all health giving agents, water stands pre-eminently prominent, and it is mistaken policy to prohibit or restrict its use in any way.

WATER WORKS IN THE UNITED STATES.

The growth of water works in this country in the last five years is something phenomenal. Up to the year 1880 the total number of water works in cities and towns in the United States was 556. From that time to the end of 1886 there were 623 new works built and put in operation, being 67 in excess of all built previously, and they are being built this year faster than ever.

FOUR-SEVENTHS OF THEIR WAGES FOR LIQUOR IN THIRTY-SIX HOURS.

In a Rhode Island factory town a certain employer recently paid out to his employes on Saturday night \$700 in new bills that had been secretly marked. On the following Monday \$400 of these marked bills were deposited in the bank by the saloon-keepers of the town. It is to be feared that the McGlynn-George Anti-Poverty Society could not help these men very much.

SANITARY FEATURES ABOUT A THEATRE.

A new theatre is being built in this city which will possess two great features, from a sanitary point of view. It will have a sliding roof, which can be rolled off at will, thus affording opportunities for the most perfect ventilation; in addition to which there will be an apparatus

for cooling the atmosphere, which will be certainly a great feature on these close and sultry nights.

CAN'T SELL BAD VEGETABLES.

At a recent meeting of the Board of Health of Philadelphia it was resolved to declare as a nuisance the sale of unripe, decayed or stale vegetables for the purpose of consumption. It was also resolved that the Chief Inspector, under directions of the Health Officer, be required to seize and destroy such unwholesome articles if, after notice, the vendors of the same do not at once comply with his directions to remove or destroy them.

MEASLES AT GIRARD COLLEGE.

This most admirably managed institution has recently experienced a very severe epidemic of measles. It was caused by the reception of a very large number of very young pupils from the thickly settled portion of the city, in one or more of whom the seeds of the disease must have been germinating. It would seem that a species of quarantine might avert such catastrophies in the future.

PUT THE LID ON THE CHAMBER.

It is a vile and certainly an unhealthy habit that so many persons have of allowing the chamber to remain uncovered under the bed. It certainly must be unhealthy for one to inhale all night long the emanations from a quantity of decomposing urine. Cultivate the habit of putting the lid on the chamber, and inculcate the habit in your children, who are most frequently the neglectful ones.

A POISONED EGG.

A woman near Milford, Ill., recently found an egg on a fence near her home,

which she took to her house and cooked and ate. Alarming symptoms of being poisoned soon came on, and a physician was summoned and with great difficulty her life was saved. The egg, which had arsenic ingeniously injected, was placed on the fence for crows.

THE FASHION OF THE DAY IN RE-CHILDBIRTH.

FIRST YOUNG LADY.—Who are those people you bowed to, Mamie?

SECOND DITTO.—Oh, don't you know them? That's Mrs. Montalembert and her husband.

"Have they any children?"

"Why, Hattie; what an idea! No, indeed! They are real stylish people!"

THE MILKMAN MUST KNOW HIS MILK.

The Court of Appeals of New York State, in affirming the conviction of a milk vendor for selling milk watered beneath the standard established by the State Dairy Law, holds that the vendor must *per se* have knowledge of the actual standard of his milk.

DEATH FROM FRIGHT.

A portion of our State recently experienced very severe floods, and this occasioned so much alarm to an old lady and an old gentleman that they actually "*died from fright*," though, of course, they both had previous heart disease.

WHEN THE DEVIL A MONK WOULD BE.

The Iowa Register says:

God and the doctor we alike adore

Just on the brink of danger; not before.

The danger past, both alike are requited,

"God is forgotten, and the doctor slighted."

LACTATED



FOOD

**AN UNEQUALLED DIET IN THE
SUMMER DISEASES OF INFANTS
AND CHILDREN.**

FOR CHOLERA INFANTUM

It is the chief reliance of many eminent practitioners, and it is the safest food in summer for all young or delicate children.

Note its Composition.

Lactose (Milk Sugar).....	25.00
Malto-diastringe.....	15.00
Soluble Carbo-hydrates.....	41.67
Gluten and Soluble Albuminoids.....	16.35
Potassium Bicarb.....	1.25
Phosphates.....	.25
Sodium Chloride and other Salts.....	.48
	100.00

It is a Cooked Food:

A Predigested Food:

A Non-Irritating Food.

An important consideration is its low price, it being much more economical than other foods. We make four sizes, selling for 25 cents, 50 cents, \$1.00 and \$2.50. A dollar can will furnish one hundred and fifty meals for an infant.

SEND FOR SAMPLE!

If any physician who has not yet made a trial of the Lactated Food will write us, we will send a package of our regular size, post-paid, without charge, with the understanding that it will be given a careful trial as soon as possible.

**WELLS, RICHARDSON & CO.,
Burlington, Vt.**

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Communications.

A CONSIDERATION OF THE CAUSES LEADING TO ADUL- TERATION IN FOODS AND DRINK.

BY E. H. BARTLEY, M. D.,

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The question is frequently asked: Why do dealers in foods and drink adulterate their goods? Why do they not sell an article for just what it is, instead of what it appears to be? Why do not the Boards of Health put a stop to all this kind of business. Are all grocers, bakers, milk dealers, druggists and confectioners dishonest?

To answer this last question in the affirmative would certainly be overstepping the bounds of truth, and yet they nearly all sell dishonest goods. By the term adulteration we usually mean more than is warranted by the strict meaning of the word. The term *fraudulent* would perhaps be a better term to express just what we mean. In other words, we mean that the article in question is sold under a misrepresentation as to its quality, identity, or real value. This will include any manipulation, addition, abstraction, or substitution with intent to deceive the buyer, and make the article

appear to be what it is not. Many merchants claim that certain kinds of adulteration are demanded by the people, and rendered necessary by sharp competition. Add to these two the lack of and love of the almighty dollar, and you have the principal causes which foster and stimulate adulteration.

It is an axiom of commercial life, that men do not invest their money and labor for love and philanthropy. If pecuniary profit is not to be had, few men will continue in business longer than sufficient time to close out. A business to live, must pay. If it will not pay, it must be changed so as to return a profit, or go. If a given article must be sold at cost, it can only be handled when it will assist in selling something that will bring a profit. The profit in merchandise depends upon the difference between the cost price and the selling price. Hence, with a given fixed selling price, the profits will depend upon how cheap the goods can be produced. This stimulates every effort to lower the cost of production. This is competition.

The meanest and most despicable adulterator is he who resorts to it purely as a means of making money. He does not propose to undersell his competitors, but he sets out to deliberately cheat his customers by selling water for "pure milk;" corn flour for wheat flour; oleomargarine for butter; glucose for cane sugar; glucose syrup for honey; starch and mustard for

pure mustard; canned bob veal for canned chicken; colored whisky vinegar, or dilute sulphuric acid, for cider vinegar; a polished and colored coffee of inferior grade for a choice Java; and a hundred other things for what they are not. To cover this fraud, he is given to showy signs, claiming his wares to be extra fine and pure, and keeps his prices up. He is apt to overdo the recommending business. A too free use of adjectives I have learned to view with suspicion. Greed is the only excuse for this kind of adulteration, and the punishment should be swift and heavy. When a man pleads the ruination of competition, or a popular demand for cheap goods, I can see some amelioration; but where the love of gain alone prompts him, I cannot.

The dishonest producer will resort to tricks and sophistications in order to undersell his honest neighbor; who will have to cut down the wages of his helpers, or cut down the price that he can pay for raw materials, or resort to adulteration in order to sell his goods in competition with his dishonest neighbor. He is driven to the wall, or becomes dishonest himself.

For example, a milkman, who has a dairy near a large city, conceives the idea of becoming his own retailer. He opens a depot, carts his milk himself, and employs a man to sell it from this depot at two cents per quart less than the market price, and two cents per quart more than the dealers would pay him for it. Or, when milk is selling for seven cents, he sells for five cents, while wholesale dealers are paying the producers three cents, and selling to jobbers for five cents. A jobber in the immediate neighborhood of the depot must sell for five cents, shut up, buy lower, or water the milk. He looks for an unfortunate farmer who is willing to sell for four cents and deliver it.

The farmer gets along under his contract very well until the pasture gets

short, when he must water his milk or feed swill, grains or other slops to increase the supply. If one cow gets sick, he is driven to more water, or to put in the milk of the sick cow. The temptation to keep up to the contract, which usually calls for quantity, and not quality, is very strong. While one jobber is thus cutting down the producer, another adds water, and still another sells at cost, just to call trade for other articles he has to sell. The economical housewife buys milk for her babe at five cents a day instead of seven, and thinks she is saving money, while one-fourth or perhaps one-half of it is more or less watered; or, what is worse, is swill fed or is from a sick cow. One hundred and twenty-five days savings will pay for one visit from the doctor and the medicine!

Or, perhaps the party in competition is a brewer. The margin on beer being very small, he is obliged to increase his sales to make it profitable. In this he is met with the difficulty that his storing cellars are not large enough to allow him to keep so large a quantity on hand for the usual time, three to four months. He must contrive methods of turning it out in a short time, without destroying the good taste of his beer. It must be free from turbidity, it must not be sour, it must keep well and taste well. As the time at command will not allow of clearing by settling, it becomes necessary to clear with gelatin, isinglass, or Iceland moss. When the first two of these are used, a clear solution is made with tartaric acid, cream of tartar or vinegar. The gelatin unites with the tannic acid of the hops, and precipitates, carrying the turbidity to the bottom with it. Some gelatin is left in solution, which easily undergoes putrefaction and spoils the beer. To prevent this salicylic acid, sodium bisulphite, or calcium bisulphite is added. The acid added with the gelatin renders

the beer too sour, and requires the addition of bicarbonate of soda before sending it out. About 12 to 15 grains of salicylic acid, and from 50 to 80 grains of bicarbonate of soda are usually added to a gallon or 10 glasses of beer. In some instances flavoring extracts or juniper berries are added to improve the taste of this half cured article. Here it is purely a question of competition, that leads to the preparation of this vile mixture. Competition in trade, therefore, may lead to all forms of sophistication.

It cannot be denied that the public, as consumers, are very largely the cause of many of the adulterations practiced upon foods. The very people who hold up their hands in holy horror at these practices are just the ones who insist upon having their food adulterated.

There are many people foolish enough to suppose that they can buy something for nothing. Quality with them is a secondary matter; cheapness is the all-important thing.

There are people who will walk a half mile to buy a dollar's worth for ninety-nine cents. These same people will go blocks to buy a bottle of *beef, iron and wine* for forty-five cents, when they know that a pint of sherry wine, which it is supposed to contain, would cost the druggist at least fifty cents.

The temptation to defraud such people by an adulterated article is certainly almost irresistible to many merchants, because they really demand it.

Again, the eye of many people must be pleased. If they wish pickles, they must be crisp and of a bright green color. No other will do, although the grocer tells them that the crispness is produced with alum, and the green pickles always contain poisonous salts of copper. The same is true of French peas, beans, etc. In spite of a label stating that "*this can*

contains one-quarter grain of copper," as now required by the law of this State, people will have these peas in preference to those known to be free from it, simply because they are green. One of these very fastidious persons may desire a cake from the baker. It must have a rich yellow color, although it is well known that the color is given by chromate of lead. In the same way vermicelli must be colored up with turmeric, saffron, or chromate of lead, to give it the appearance of having abundance of egg in it. If the baker, or the maker of the vermicelli, should make a genuine article and attempt to sell it on its merits, he would lose his trade.

Why are wines sophisticated? It is principally to reduce the cost. To this cheapening process there seems to be no limit. There is a firm in this city making large quantities of wine from raisins and glucose. This wine is manufactured expressly for the purpose of reducing California wines. The proportion used is from twenty-five to fifty per cent. A worse wine was discovered last year in New York city, made of raisins and dried peaches, and heavily treated with salicylic acid to keep it. It was a very dirty article, indeed, and the authorities did well in destroying a large amount of it. As long as Americans will have such cheap mixtures, under the name of wine, it seems almost a pity to tax them to support officers to prevent them from getting what they want. Is it a wonder that men can be found who will supply just what is asked for? I think it is a law of political economy that demand usually precedes a supply; or, at least, the former keeps pace with the latter. This is especially true of manufactured articles; which fact has given rise to the old adage—"Necessity is the mother of invention." There are a great many men in this country who are seeking just such necessities.

A cause, which, in this country, leads to a great deal of the wholesale adulteration in foods, is the cost of living. The cost of maintaining a respectable living, in this country, is too great in proportion to the price of wages. Among the laboring classes, as well as among the wealthy classes, extravagance in some form or other is too common. It may be the drinking habits, so prevalent, or a pride for gaudy dress, or a desire to live in a fine house, or maintain something denominated style. Whatever the extravagance may be, it is apt to result in the necessity of economizing on the dietary. I have seen a mother water the milk she gave her little ones to drink, with the idea of making it go farther. It is certainly poor economy to attempt to cheat ones stomach by eating two meals a day, or by putting into it old, half spoiled canned goods, tainted meats, stale bread, inferior flour whitened with alum or blue vitriol, and a decoction of beets, rye or beans, instead of coffee. The stomach is likely to discover the fraud sooner or later, and pay back with compound interest. The eye and the palate may be more easily deceived than the stomach.

This attempt to please the eye at the expense of the stomach, is illustrated in the coloring of butter, milk, cheese, sausages, coffees, teas, cakes, vermicelli, wines, jellies, mustard, so called fruit ice creams, pickles and confectionery. Even if harmless colors were always used, they are, in most instances, intended to deceive. In the case of confectionery, and other eatables sold on the street corners and in small stalls, to be found in all cities, various colors are employed to catch the eye of the four year old whose foolish parent has supplied him with a penny. The vast majority of the cheap and unwholesome stuff sold by small shops and street corner merchants, is

prepared for and sold to children. This very bad practice of supplying little children with pennies, works great good to these little shops as well as to the medical fraternity.

Candies are now largely made of glucose to cheapen them and to prevent the subsequent crystallization and hardening. While glucose can hardly be considered an adulteration, there is one feature in connection with its use which has generally been overlooked. This sugar is much more fermentable than cane sugar, and it very readily undergoes fermentation in the stomach. It is a well-known fact that foreign fermentations very soon derange the digestion. It is also certain that the frequent eating of candies does cause indigestion, especially in children. How much of this is due to the indirect action of glucose, owing to its ready fermentation in the digestive organs?

If we have shown that popular demand is responsible for a very considerable part of the adulteration practiced, it follows as a logical deduction, that popular apathy or ignorance is behind all. It is only when the public mind is freshly stirred up by cases like those recently brought to light in Philadelphia, in relation to the use of chromate of lead by bakers, that the masses frown down these injurious adulterations.

Over three years ago the use of chromate of lead in vermicelli and confectionery was stopped in this city and New York, and at that time the daily press advertised the matter quite extensively. It seems, therefore, a matter of surprise that we should so soon have such a wholesale use of the same agent by bakers.

Eternal vigilance seems to be the only price of pure food. There is great danger that legislation upon these matters may become inoperative for the lack of sufficient public sentiment to carry out

THE ANNALS OF HYGIENE.

the laws. It is easier to make laws than it is to enforce them. In how many cities in this country can an adequate enforcement of the existing laws be secured, with the appropriations the people are willing to grant?

In the city of Brooklyn, for example, where nearly 200,000 quarts of milk are used each day, but one inspector is employed, except at certain seasons of the year. In New York city two inspectors are allowed, a number entirely inadequate for the work.

The question is frequently asked; why do not the Health authorities put a stop to adulterations?

The answer is that the people have not risen to a knowledge of the importance and the magnitude of the work, and will not support a sufficient force of officers to carry out the laws. As long as this is the case, and so long as the people insist upon pleasing their eyes and palates instead of demanding pure, nourishing and wholesome food, all the laws in Christendom cannot stop adulterations. Besides this, Boards of Health are organized and supported to protect the public health and not to suppress frauds. Hence they only take cognizance of adulterations which may affect the health of the consumer, and not his pocket. Public sentiment must be educated up to the spirit of the laws, before the latter can be made effective. Some time since, an inspection showed that grossly adulterated milk was being served to a leading hospital in this city. After the machinery of the law had been set in motion, to punish the offender, the superintendent of the hospital implored the authorities to withdraw the charge, because they had no fault to find with the milk. The superintendent believed that adulterated milk was good enough for hospital invalids.

It is to the daily and weekly press that we must look for the education of public

sentiment upon these matters. The publications of Boards of Health seldom reaches the masses. Even sanitary journals circulate principally among a class of people who are already alive to the importance of the subject, but do not reach the great mass of the people. The greatest power in the hands of sanitary authorities, is the daily press. There are thousands of busy men who take no journal, or read none, outside of the daily paper. Their education, outside of their own business, is derived from that paper. It is principally by newspaper agitation that the laboring classes are to be educated in sanitary matters. Let us, then, follow the example of the politician, and *keep it before the people.*

“THE MAJESTY OF LAW IN SANITATION.”

BY J. ANDREWS HARRIS, D.D.,

Rector of St. Paul's Church, Chestnut Hill, Philadelphia.

A paper read before the State Sanitary Convention, May 13th, 1886.

This paper is not unnaturally written from a clergyman's point of view. It begins with the postulate that there is a God. It assumes nature to be the outcome of God, and to be governed by His laws. It understands this Convention to be the means of increasing popular knowledge on important subjects, not only by the presentation of original study and thought, but also by a popular presentation of what others have thought and said,—thoughts recorded in documents not perhaps generally read and yet which ought to be widely known, and it seeks rather to collate than to originate.

There is a question recorded in a wonderful book written long ago,—the book of Job,—and one to which a negative

answer must always be given. The question is this: "Canst thou by searching find out God? Canst thou find out the Almighty unto perfection?" The answer is "No." And yet the men of the present generation, inheritors of the gropings of past ages, know more about God than the elders did. They have learned this much, if they have learned nothing more; that he is the God of *law*, not of caprice; that, from the movement of myriad suns, each with its planetary system about a central point in infinite space to the growth and propagation of microscopic "bacteria," all is regulated by *law*, inexorable in its functions, faultless in its operation. God never breaks his laws; he never permits them to be violated with impunity. They operate in the material universe with inevitable accuracy; with the same accuracy they work in the spiritual universe. God never changes his mind,—let us thank God for that; it is the one element of stability amid what, in our ignorance, seems often to be so fluctuating. No grander statement of the fact was ever made than that which describes him as "the Father of light, with whom is no variableness, neither shadow of turning."

Men have been a long time finding out this truth, even with nature spread out before them, even with "revelation" in their hands; and no wonder, for nature is vast, and revelation has been but a series of slow progresses, and law is complex. Its complexity has often obscured, does often obscure the secret of its working. But even the apparent exceptions, when men get to understand them, only establish the majesty of law. Science,—by which is meant *knowledge of law based upon observation of facts*,—is making this more and more evident. Theology,—by which is meant the *rational of Deity and his relations to man*,—

seems not yet to have its feet firmly planted on the rock upon which science stands; but it is approaching that foundation; its feet are upon the outer circle of it; and when it shall have advanced to where science stands, then will be recognized the likeness of twin sisters, and then "shall be brought to pass the saying that is written, 'Mercy and truth are met together, righteousness and peace have kissed each other.'"

Each understanding the other's language, both bowing reverently before the God of *law*; and their blended voices shall ascend in tuneful harmony, eternal as the ages, to the throne of God in the everlasting refrain, "Great and marvelous are thy works, Lord God Almighty; just and true are thy ways, thou king of saints. Who shall not fear thee, O Lord, and glorify thy name?" Thenceforth will be impossible the saying, "Where a scientist is, there is an atheist; where a theologian is, there is a fool."

Under this view of things a "miracle" will be seen to be, not a *breach* of law through Almighty caprice, but the outcome of a *not understood combination of laws*, or of *an as yet unknown and higher law*, by divine power to effect certain purposes. Under this view of things, just as surely as one believes that he cannot "by searching find out God," that he cannot "find out the Almighty unto perfection," so *and therefore* must he believe that he cannot always comprehend or explain the *extent* of his power to effect results by combinations of laws in ways as yet unknown to man, or the extent of his power to effect results by the operation of a law higher than those yet known. Under this view, the question will not be "is a miracle possible?" but "is there evidence that it was actual?" Under this view, if in times of pestilence litanies go up to God for salvation from

its terrors, it will be not to supplicate God to break his laws because men have been ignorant of them; or, knowing them, have been fools enough to break them; but it will be to implore him to give a better knowledge of those laws by an enlightenment of the understanding, and to give the courage of humility to reverence and keep them.

For the growth of a single blade of grass is as truly a "miracle," *i. e.*, the operation of laws which evidence the presence of *divine power*, as was the giving of sight to the blind or the raising of Lazarus from the dead; But *all*, the effect of *law*, in the one case proximately understood, and therefore called "natural," in the others absolutely mysterious as yet, and therefore called "supernatural." For, in very truth, the dividing line between "the natural" and "the supernatural" is the line of our ignorance of the law of the latter, and our assumed knowledge of the law of the former. To believe anything else is to undermine any intelligent faith in "the Father of light, with whom there is no variableness, neither shadow of turning," faith that "God is all in all."

As a single illustration of what is meant, take the case of what has been recently accomplished by a "combination" of known laws of forces,—the sending and receiving of messages by telegraph on a train of cars running at full speed. Fifty—certainly one hundred—years ago, this would have been considered a "miracle" in every sense of the term, *incomprehensible, inexplicable, and in the most advanced scientific judgment impossible*. Indeed, in some parts of the world it would have subjected him who accomplished it to the faggot and the stake, as being in league with the evil one. It is no less *wonderful now*; but we know that it is the result of the

operation of *law*. Then it would have been counted "supernatural;" *now*, it belongs to the sphere of the "natural;" although *what* electricity really *is* we know as little as we know *what* the *life* in a growing blade of grass really *is*. There are all grades of misunderstanding the processes of the laws of forces. In the early days of the telegraph, a conscientious and thoughtful lady of Milesian parentage, doing household service in my father's family, once said to me: "Misther John, I don't rightly understand how thim letthers they send by telegraph gets past the poles the wires is on!" To *her* it was as incomprehensible as a "miracle."

And now, as to the application of these thoughts on the majesty of law to the subject of sanitation. "It is a very large and inviting field; but brevity must be studied; and for the sake of brevity and for the sake of appealing to an expert in such matter, let me quote from a book which every one ought to have and read—"Notes on Nursing" by that angel of mercy, Florence Nightingale; and simply with reference to the health of houses.

After enumerating five *essentials* to such health, viz. Pure air, pure water, efficient drainage, cleanliness, and light; and after showing just how and why they are essential, Miss Nightingale says (p. 29, sq.):

"And now, you think these things trifles, or at least exaggerated. But what you 'think' or what I 'think' matters little. Let us see what God thinks of them. God always justifies his ways, while we are thinking, he has been teaching. I have known cases of hospital pyæmia quite as severe in handsome private houses, as in any of the worst hospitals, from the same cause, viz., foul air. Yet nobody learned the lesson, nobody learned *anything* at all from it. They went on *thinking*,—thinking that the sufferer had

scratched his thumb, or that it was singular that 'all the servants' had 'whitlows,' or that something was much about this year; there is always sickness in our house.' This is a favorite mode of thought—leading not to inquire what is the uniform cause of these 'whitlows,' but to strifle all inquiry. In what sense is 'sickness' being 'always there,' a justification of its being 'there' at all?

"I will tell you what was the cause of this hospital pyæmia being in that large private house. It was that the sewer air from an ill-placed sink was carefully conducted into all the rooms by sedulously opening all the doors, and closing all the passage windows. It was that the slops were emptied in the foot-pans; it was that the utensils were never properly rinsed; it was that the chamber crockery was rinsed with dirty water; it was that the beds were never properly shaken, aired, picked to pieces, or changed. It was that the carpets and curtains were always musty; it was that the furniture was always dusty; it was that the papered walls were always saturated with dirt; it was that the floors were never cleaned; it was that the uninhabited rooms were never sunned, or cleaned, or aired; it was that the cupboards were always reservoirs of foul air; it was that the windows were always tight shut up at night; it was that no window was ever systematically opened even in the day, or that the right window was not opened. A person gasping for air might open a window for himself. But the servants were not taught to open the windows, but to shut the doors; or they opened the windows upon a dark well between high walls, not upon the area court; or they opened the room doors into the unaired halls and passages by way of airing the rooms." Miss Nightingale goes on to say, "now all this is not fancy, but fact. In that handsome

house I have known in one summer three cases of hospital pyæmia, one of phlebitis, two of consumptive cough;—all the *immediate* product of foul air. When, in temperate climates, a house is more unhealthy in summer than in winter, it is a certain sign of something wrong. Yet nobody learns the lesson. Yes, God always justifies his ways. He is teaching while you are not learning. This poor body loses his finger, that one loses his life. And all from the most easily preventible causes."

This is the testimony of an expert. Even those who are not sanitary experts—I mean parish clergymen—have by their experience in pastoral visiting been often led to wish that the attending physician would use his authority not only in administering drugs, but even more in insisting upon cleanliness and proper ventilation. Such a use of his authority would prevent much sickness, would save many lives. Is it too late for the College of Physicians to take this matter in hand?

But the majesty of law asserts itself elsewhere than in the sanitary condition of private houses. Why is it that children—sometimes teachers—sicken and die from attendance at our public schools? It is positively shocking that such a record as the following should be possible in a city one of whose boasts is its system of public education. The record is taken from the daily papers, and is in a measure official. Names are here suppressed, and localities designated by letters of the alphabet. One statement was to this effect:

"A fever-stricken little boy is tossing upon his bed at No. ——— street; he is ten years old; he may get well, and he may not. Two weeks ago, with many other little mortals in his district, he pondered over his primer in the old A school-house. One afternoon he lost his

cheerfulness; his cheeks were flushed, he had a headache, and he has since been in bed. Dr. — says it is typhoid fever, and it is said it was brought on by the deadly gases from the outhouses of the school, which are sadly in want of attention, and that every child is liable to get sick. * * The cellar of the school, a resident in the vicinity says, is often covered with stagnant water."

Now let me call your attention to the following astounding statement, appended to the above account: "A health officer (name here suppressed) says, *if a complaint is filed with him* he will send an inspector to the premises!" As if the *facts* of the case were not complaint enough! While the school directors and the health officers have been neglecting their duties—probably not understanding the first principles of them—the majesty of law has been asserting itself in consequent sickness and perhaps death. Nor is this an isolated case. From another prominent paper I take the following:

"A medical inspector of the Board of Health has prepared a report giving the result of his inspection of a number of the school-houses of this city. For brevity's sake I will summarize:

Schoolhouse B.—Location so bad and atmosphere of building so defective, that it may be unwise to expend any money in efforts to improve its sanitary condition! And yet the *laws* of health and disease work on remorselessly among the children sent to that school!

Schoolhouse C.—Old; becoming more dilapidated every year.

Schoolhouse D.—Badly arranged and defectively constructed. Not susceptible of much improvement.

Schoolhouse E. — *Remains without change as previously reported.* The extremes of light and darkness are exemplified here.

Schoolhouse F.—Outhouses still too close to the building.

Schoolhouse G.—No *improvement* noted in condition. Cellar still damp—even quite *wet from an obstructed drain.*

Schoolhouse H.—No change has been noted; yard still filthy and offensive.

I humbly submit that the above exhibit is simply appalling in its evidence of the incapacity, ignorance and criminality of *some* at least of those who have charge of the public school system of Philadelphia. But until the national tariff ceases to be an issue in the choice of school directors; until that official position is sought and filled according to some more rational plan than being able to carry a precinct for some political "boss," a long-suffering but lethargic public—which has *some* rights in the matter of public education—must be content to ponder sorrowfully upon the majesty of God's law, which will not swerve from its inexorable processes even to please politicians. The chief *penalty* of the breach of law falls, alas, on *innocent* victims. Those who are taxed to produce this result should take some swift and stern measures with those who are responsible for it.

Much might be said in this connection about the impure and otherwise defective water supply of this great city; about the ill-paved and often filthy streets; about the absolutely defective sewerage system, did time permit. The majesty of law in sanitation *will* in time assert itself in spite of demagogue, "boss," and politician; for, in the words of one of England's greatest divines: "Of law there can be no less acknowledged than that her seat is in the bosom of God, her voice the harmony of the world; all things in heaven and earth do her homage, the very least as feeling her care, and the greatest as not exempted from her power; both angels and men, and

creatures of what condition soever, though each in different sort and manner, yet all with uniform consent admiring her as the mother of their peace and joy."—(*Hooker, Eccl. Pol., I., § 16.*)

REPORT ON BAKING POWDERS.

BY PROF. HENRY LEFFMANN, M. D.,
OF PHILADELPHIA.

[Especially made for the Annals of Hygiene.]

We have considered that a fair, impartial, and reliable report on "Baking Powders" was much needed, because we have recently noticed the claim set forth by two prominent manufacturers, each, that theirs was the "only baking powder free from adulteration;" and in each instance, among the list of names given as authority for this claim, was to be found the name of a prominent New York chemist. Since it is obviously impossible that this chemist should have testified that each of these powders was the only one free from adulteration, we felt that the claims set forth were unreliable, and that it was clearly our duty to furnish the public with reliable information on this important question. We, accordingly, bought from one of our largest and most reliable grocery stores one package, or bottle, each of the following powders, which, we were informed, were in most demand:

1. Rumford Yeast Powder.
2. Royal Baking Powder.
3. Peerless Baking Powder.
4. Sea Foam Baking Powder.

These powders were removed from the boxes or bottles in which they were bought, placed in packages, with no marks save the numbers from 1 to 4 (in the order above given), and sent to Prof. Henry Leffmann, who was requested to analyze them and make his report by numbers. It will be observed that he did

not know, and had no means of knowing, what powders he was examining.

We will first publish Prof. Leffmann's report, and then make our comments thereon:

Commonwealth of Pennsylvania,
Board of Agriculture,
Department of Hygiene and Food Inspector,
H. Leffmann, M. D., Inspector,
Philadelphia, Pa., Aug. 2d, 1887.

DEAR DOCTOR: I transmit herewith the results of the examination of the four samples of baking powder. To avoid repetition, I may observe that baking powders are mixtures of baking soda (bi-carbonate of soda, sodium acid carbonate), with some vegetable acid or acid salt. In practice tartaric acid, cream of tartar, acid phosphate, and alum are used. The most approved baking powders are those made with either cream of tartar or acid phosphates. Some fine insoluble powder (starch) is generally added to make the mixture keep well. Although there is no positive evidence to show that alum powders are unwholesome, yet the use of such powders is to be discouraged. They are, to say the least, put on the market as cheap substitutes for the higher class articles:

No. 1. Phosphate Powder.—No Alum. No Ammonia. Corn Starch.

No. 2. Tartrate Powder.—No Alum. Contains Ammonia. Corn Starch.

No. 3. Alum Powder.—Corn and Potato Starch. Contains Ammonia.

No. 4. Tartrate Powder.—No Alum. Corn Starch. No Ammonia.

Yours, HENRY LEFFMANN.

To JOS. F. EDWARDS, M. D.

It will be seen from the above report that the "Rumford Yeast Powder" holds a position absolutely its own, in so far as it is the only phosphate powder on the market. Of course, physicians all know that there are many persons to whom the

use of the phosphates would prove very beneficial, and therefore this powder may be recommended.

For the benefit of those who did not see our July issue, we wish again to state that in all instances our examinations are made without any knowledge on the part of the manufacturers that such examinations are contemplated. The goods will always be bought in open market, and the reports will be as accurate as science can make them.

REPORT ON THE SANITARY CON-
DITION OF CAMP WINFIELD S.
HANCOCK.*

BY PROF. WILLIAM B. ATKINSON, M. D.,
OF PHILADELPHIA.

Inspector for the State Board of Health.

On Tuesday, August 2, 1887, I visited the site of the camp at Mt. Gretna, Lebanon county.

The campground was admirably located on high rolling ground along the line of the Cornwall & Lebanon Railroad, about midway between the termini of that road. It occupies about one hundred (100) acres, with a most excellent drainage, so that in a short time after a remarkably severe storm the ground was left quite dry.

The commanding general had ordered the tents to be located in the open ground so that the sun might rapidly dry them and the camp equipage in event of rain. The wisdom of this plan was shown on this visit, there having been a heavy downfall of rain during the previous night, and already by noon the tents, bedding, etc., were dry and fit for occupation.

The water supply for the entire camp was to be obtained from a reservoir containing 52,000 gallons of excellent water, obtained from a neighboring mountain

stream, and I subsequently found that this was supplemented by a number of fine springs in various parts of the grounds. The water from this tank was conveyed to the neighborhood of each brigade by pipes, so as to avoid the necessity of much carriage on the part of the cooks and others. In the rear and to the right of the centre of the camp was Lake Cone-wago, which was used by the men for bathing and washing. The ground was composed of a red, sandy soil, through which moisture rapidly percolated, so as to leave the surface dry.

On Monday, August 8th, I again visited the encampment, and in company with Dr. D. J. McKibbin, Medical Inspector of the Schuylkill District, who had also previously inspected the location on Tuesday after my departure, once more inspected the camp.

The commanding general, the surgeon general and all the officers with whom we came in contact received us most courteously, and in every way evinced their appreciation of the importance of our work.

We found, as I have before said, the water supply abundant and excellent, the soil farmable and well drained, the medical supplies well selected and all that was required, the food abundant and of good quality, and *generally* well prepared for the table. Also, in several companies we found an abundance of dairy products,—milk and butter. We would urge in future encampments that this be made a special point. A proper amount of carbolate of lime and other disinfectants had been placed at the disposal of every company. In the majority of cases, the latrines had been properly prepared and located, but in a number of instances the sinks and latrines were much too shallow, and not sufficiently wide to fully perform the work for which they were intended.,

*The annual encampment of the National Guard of Pennsylvania, August 6-13th.

and several that we noticed were in the rear of and too near the cook houses and tents.

But while we found much to commend and admire, yet it is undoubtedly the fact that it cannot be expected that a large body of men (there were 8,200 of the troops and perhaps enough servants and camp followers to make up full 10,000 men) could be suddenly taken from their homes and occupations and thrown into a camp, without much to learn and to practice, that it would be surprising indeed if all could be carried on exactly as could be desired.

But few of the men seemed to understand that it was equally a part of their duty, to aid in the policing of the camp as they would their own homes. Hence in a number of instances, there was gross carelessness as to the use of the latrines and some of them were in a decidedly filthy condition. Again, a few of the companies were unprovided with kitchens and hence the cooking was very imperfectly performed. Again, in some cases, the drainage was so carelessly provided for that a continuation of such a condition would have caused great detriment to the health of those compelled to remain and sleep in the immediate vicinity.

Perhaps one great cause of this is the fact that often the medical officers of a regiment are regarded and regard themselves as merely to be called upon in event of sickness or casualty, while the truth is that it is their duty to see to the sanitary conditions of the camp and thus prevent the encroachments of disease. It is a well known fact that in the early days of the late war this was the usual trouble and constantly kept the medical men at work to see that the causes of the disease and death outside of battle casualties were prevented from destroying the efficiency of the forces.

Again, there is such a great change in the habits of the men, in their food and surroundings that these also act as factors to produce sickness. As usual, what slight illness was found in camp was due to diarrhoeal trouble, or constipation. Undoubtedly these were the result of the great change in food and habits. Almost invariably many men will indulge in over-eating, improper food, and the like which quickly cause derangement of digestion and its usual concomitants.

On occasions like this, from the prevalent desire to be with their comrades, and the pride both of officers and men to present full ranks, men are apt to be permitted to go to camp who are already suffering with sickness, even though it be of a slight form or from carbuncles, injuries, etc., which are apt to be aggravated by camp life.

A camp is supposed to be an effort to reduce to practice in one continued school, the teachings of the individual classes. Now, while the men and officers are week by week being drilled in the manual of arms and the evolutions of companies, but little or nothing is done in reference to those equally important matters, the hygienic surroundings and sanitary regulations of each company. When brought into camp, both officers and men are wholly unacquainted with the care of the cuisine, the inspection of food, the obtaining of a water supply, the drainage of a camp, the preparation and maintenance in good order of the latrines, and the general policing of a camp. We would respectfully suggest and urge that it would be well if the medical officers were required to inspect the men of their respective commands prior to going into camp. That **ALL** the officers, and the men be fully instructed in all matters pertaining to the preservation of their health. It seems only to be

expected that the surgeons shall care for the injured, while it should rather be their work to prevent sickness. When these matters are properly studied and provided for, then the annual camp will prove to be a valuable and correct preparation for war in time of peace.

PASTEUR'S PROPHYLAXIS OF HYDROPHOBIA.*

The report of the commission appointed under the authority of the British Parliament to investigate M. Pasteur's treatment of hydrophobia is altogether the most complete and satisfactory account of the whole subject that has yet been given. It is true that it contains little that has not been published before, but there has always been a suspicion that the French reports were colored by a patriotic enthusiasm, while the origin and the character of the committee must command entire confidence in its conclusions. The members were Sir James Paget, chairman; Dr. Lauder Brunton, Dr. George Fleming, Sir Joseph Lister, Dr. Richard Quain, Sir Henry E. Roscoe and Dr. J. Burdon Sanderson, three or four at least of these being men of world-wide fame. They have been engaged in their investigations since April, 1881, and their report, presented to the House of Commons by Mr. Ritchie, president of the Local Government Board, makes a blue book of considerable proportions.

The line of investigation followed has been, first, personal investigation by members of the committee into M. Pasteur's method of proceeding and its results. The members of the committee who, in conducting this inquiry, visited M. Pasteur, testify to his great courtesy and to that of his assistants, and to the candor with which the entire subject was submitted to their investigation. Secondly, a

series of experiments was conducted by Mr. Horsley under the supervision of the committee. The experiments referred to show that if a dog or a rabbit or other animal be bitten by a rabid dog and die of rabies, a substance can be obtained from its spinal cord which, being inoculated into a healthy animal, will produce rabies similar to that which would follow from the bite of a rabid animal, or only differing in non-essential particulars. The rabies thus transmitted by inoculation may by similar inoculations be transmitted to a succession of animals—for example, rabbits—with marked increase of intensity. But then the remarkable fact presents itself that the virus in the spinal cords of rabbits that thus die of inoculated rabies may be gradually so attenuated by drying the cords after a manner fully described in the appendix attached to this report that, after a certain number of days' drying, it may be injected into healthy rabbits or other animals without the danger of producing rabies. And by using on each successive day the virus from a spinal cord dried during a shorter period than that used on a previous day, an animal may be made almost certainly secure against rabies, whether from the bite of a rabid dog or other animal, or from subcutaneous inoculation. The protection from rabies thus secured is proved by the fact that if some animals thus protected and if others not protected be bitten by the same rabid dog none of the first set will die of rabies and all of the second set will so die.

Remarkable illustrations of the accuracy of this statement will be found in the appendix to the report. For example six dogs having been protected by subcutaneous injection of emulsion of spinal cords of rabbits which had died of rabies, none of these dogs suffered from the injections; and, when they were completed,

* From *The Phila. Times*.

the six dogs thus protected and two others unprotected and some rabbits unprotected were made insensible by ether and were then bitten by rabid dogs or a rabid cat on an exposed part. The whole of the protected dogs remained free from rabies, while nearly the whole of the unprotected animals died. We quote a single example: The protected dog No. 6 was bitten on three different occasions by a furiously rabid cat, then a month subsequently by a furiously rabid dog, and at the expiration of another month, by another furiously rabid dog. This dog died ten weeks after being bitten for the third time, but not of rabies. Two rabbits inoculated by the spinal cord from this animal showed no signs of rabies during life or when they were killed several months afterwards.

The committee says: "Then it may hence be deemed certain that M. Pasteur has discovered a method of protection from rabies comparable with that which vaccination affords against infection from smallpox."

"It would be difficult to overestimate," say the reporters, "the importance of the discovery, whether from its practical utility or from its application to general pathology." It shows a method of inoculation analogous to that which has been already successfully practiced by M. Pasteur in anthrax, charbon and swine plague.

The evidence that an animal may thus by progressive inoculations, be protected from rabies, suggested to M. Pasteur that if an animal were bitten by a rabid dog, the fatal influence of the virus might be prevented by a timely series of progressive inoculations. "He has accordingly," say the committee, "in the institution established by him in Paris, thus inoculated a very large number of persons believed to have been bitten by rabid

animals. We have endeavored to ascertain with what amount of success he has done so. The question might be answered with numerical accuracy if it were possible to ascertain the relative number of cases of hydrophobia occurring among persons of whom, after being similarly bitten by a really rabid animal, some were and some were not inoculated. But an actual numerical estimate of this kind is not possible, for several reasons—first, it is often difficult, and sometimes impossible, to ascertain whether the animals by which persons were bitten, and which were believed to be rabid, were really so; secondly, the probability of hydrophobia occurring in persons bitten by dogs that were certainly rabid depends very much on the number and character of the bites, and whether they are on the face and hands or on parts covered by clothes; thirdly, in all cases the probability of infection from bites may be affected by speedy cauterization and excision of the wounded parts; fourthly, the bites of different species of animals, and even of different dogs, are probably, for various reasons, unequally dangerous."

The amount of uncertainty due to these and other causes may be expressed by the fact that the percentage of deaths among persons who, being bitten by animals believed to be rabid, and who have not been inoculated or otherwise treated, has been estimated at the rate of only five per cent. in some groups of cases, in others at sixty per cent. and in others at various intermediate rates. The mortality from bites of rabid wolves, for example, has been in different instances estimated at from thirty to ninety-five per cent.

To ascertain as far as possible the influence of these sources of fallacy in cases inoculated by M. Pasteur, the members of the committee who went to Paris requested

him to enable them to investigate by personal inquiry the cases of some of those who had been treated by him. He at once assented, and the names of ninety persons were taken from his note-book. No selection was made, except that the names were taken from his earliest cases and from those persons living within reach of Paris, Lyons and St. Etienne. The appendix and the report of the committee contains notes made on the spot concerning all these cases, and satisfied the members of the committee of the perfect accuracy of M. Pasteur's reports. Surveying, then, the whole of these ninety cases, and comparing them with an equal number of unassorted cases—*i. e.*, in which the doubtful points above alluded to were more or less present—the committee say: "We believe that of these no less than eight would have died if they had not been inoculated. At the time of the inquiry in April and May, 1886, which was at least eighteen weeks since the treatment of the bites, not one person had shown any sign of hydrophobia, nor has any one of them since died of that disease. Between October, 1885, and the end of the year 1886, M. Pasteur inoculated 2,682 persons, including 127 who went from this country (the whole of these English cases are described in the appendix)." Of the whole number of these cases, taking five per cent. as the lowest estimate of those who would have died had they not been protected, deaths would have occurred in 130 cases, while the actual number stated by M. Vulpian, speaking for M. Pasteur, was only thirty-one, including seven bitten by wolves, in three of whom the symptoms of hydrophobia appeared before they could be brought under the influence of treatment. The number of deaths assigned by those who have sought to prove the inutility of

Pasteur's treatment is forty out of the 2,682 cases.

The committee thereupon observe: "Making a fair allowance for uncertainties and other questions which cannot now be settled, we believe it sure that, excluding deaths after bites by rabid wolves, the proportion of deaths in the 2,682 persons bitten by other animals was between 1 and 1.2 per cent.—a proportion far lower than the lowest ever estimated among those not submitted to M. Pasteur's treatment, showing even at this lowest estimate a saving of not less than one hundred lives."

The value of M. Pasteur's method is further confirmed by the results obtained in certain groups of his cases. Of 233 persons bitten by animals in which rabies was proved, either by inoculation from their spinal cords or by the occurrence of rabies in other animals or persons bitten by them, only four died. Without inoculation it is more than probable that at least forty would have died. Further illustrations of this successful result is shown among other additional groups of cases. Between the end of last December and the end of March M. Pasteur inoculated 509 persons bitten by animals proved to be rabid, either by inoculation from their spinal cords or by the deaths of some of those bitten by them or as reported on by veterinary surgeons. Of this number only two have died. One of these was bitten by a wolf a month before inoculation, and died after only three days' treatment. If we omit, say, one-half of these cases as being too recent, the other 250 have had a mortality of less than 1 per cent., instead of 20 to 30 per cent.

"From the evidence of all these facts," the committee then say, "we think it certain that the inoculations practiced by M. Pasteur on persons bitten by rabid

animals have prevented the occurrence of hydrophobia in the large proportion of those who, if they had not been so inoculated, would have died of that disease; and we believe that the value of his discovery will be found much greater than can be estimated by its present utility, for it shows a method of inoculation by which it may be possible to avert after infection other diseases besides hydrophobia. His researches have also added very largely to the knowledge of this disease, and have supplied what is of the highest practicable value—namely, a sure means of determining whether an animal that has died under a suspicion of rabies was affected really with the disease or not."

DOES OVERWORK KILL?

The following is from Julian Ralph's New York letter to the *Phila. Press*:

If you had stopped in any of the downtown Delmonico places at luncheon time on the hottest days in the recent tropic spell, when it seemed simply barbarous to exist, you would have been surprised, or or at all events I was, to notice how many very rich and influential men were at work in their offices, precisely as in mid-Winter. Railroad and bank and steamship presidents, the leaders in Wall Street (and most of the Wall Street offices are as hot just now as the consequences of sin) and men of vast means in various lines, were in the throngs of hasty diners. The public impression that they are nearly all in Europe or off on their yachts or at their Summer houses is the natural one, but it is not correct. Some rich men like August Belmont, the banker, and President John Hoey, of Adams Express, or William R. Grace, the shipping prince, live close at hand on Long Island or in New Jersey and go to and from their cool country seats every day. This is Jay

Gould's plan, also. But there are hundreds who are not able to leave their affairs and who sit in sweltering offices consoled by the thought that their wives and daughters are in Europe or the mountains or on some breezy beach.

The sight of these slaves of business suggested a discussion as to whether men break down by too close application to work or whether the reverse is more generally the case as illustrated by the exclamation of an Irish laborer: "Arrah! how happy a mon is whin he's a workin'?" Mr. Beecher always believed that men killed themselves by overwork, and, on the other hand, the editor of the *Sun* has maintained that sustained mental effort is conducive to longevity, as witnessed by the examples of Bismarck, Gladstone, John Bright and a host of others. Yet all their friends believe that Colonel Thomas A. Scott, President James H. Rutter, of the New York Central, and William H. Vanderbilt died from too exhaustive mental application and that instances of rescue by prompt stoppage of work like the case of Thomas B. Connery, ex-managing editor of the *Herald*, and now a consul in Mexico, are numerous. I took the question to some of the most conspicuous men, whose work was holding them in town on the hottest day of the year, satisfied that they must have paid some attention to the subject as one that concerned themselves.

Dr. Norvin Green, president of the Western Union Telegraph Company, is quite certain that men break down from overwork. "They reduce their systems to such a condition," said he, "that when some exciting cause develops it they are carried off by paralysis or apoplexy. The exciting cause may be any one of a thousand things, a cold or what-not, but it finds them ready and takes them off.

"My predecessor, President Orton, of this company, died from overwork and worry about his work. He worked night and day. Often in the day time he talked with so many persons, directors and others in the company, that night found him with work on hand. He had a black bag in which it was his custom to carry papers up to his house and there he continued his labors. He was in a debilitated condition when one night he ate too heavily or took two meals too closely together and that proved the cause of the fatal stroke from which he died. The many instances we know and read of where men die after losing their money in Wall street illustrate the same thing. They are brought to the same condition as is produced by work and worry. I believe in divertisement at night, in evening amusements that take the mind away from the shop after work is done. I seldom work at night and try never to do so. Mental work is more exhausting than physical work. The habit of driving in the park that many men rely on for recreation I do not believe in. If they drive alone they think of business and if they take a companion they talk shop."

Mr. Eugene Kelly, the banker and philanthropist, was found, like President Orton, hard at work on the hottest day of the year in his office in a narrow, downtown street. He, also, believes that men may and do kill themselves by overwork. "Notice," said he, "how often men go insane and kill themselves when they have nothing—certainly not money—to want for. There have been plenty of such instances. Their hearts are in their work and their minds are wrapt up in it. It may be that some neglect their health and eat and sleep irregularly, but if you bring that question in you open discussion. As far as the question by itself of whether there is such a thing as too excessive work

or not is concerned, I think there is. Think of the men who pave the streets bending their backs in pain and standing in the hot sun. They often kill themselves and, really, it is a wonder they do not do so oftener. In cases of mental work the men who are wrapt up, heart and mind, in what they are doing are the ones who give way."

Perhaps no man in the city has so many business cares as Erastus Wiman. He is the president of a railroad and of a telegraph company, and the ventures he is in are too many to enumerate in a newspaper article of this length. To him I went for his answer to my question. "I don't know," said he; "I sometimes think that if work will kill anyone it ought to have killed me. In the cases that have fallen under my observation, it has been worry and irregularity, rather than simple labor, that have broken men down. Hasty or improper or irregular eating, missing meals and trying to do without sleep are the mischief-makers in many cases. To be sure, they are the consequences of a too thorough surrender to work and so you may ascribe death from such causes to the work itself, for, certainly, everything was subordinated to labor; but, on the other hand, a little system and regularity and a proper regard for health could have been observed and the same amount of work performed without the fatal consequences that followed the other course. No; I have my doubt whether work by itself will kill a man."

Ex-Postmaster General Thomas L. James instantly stepped to the other side of the question. He has worked as hard as he knew how, and that was very hard; indeed, first in putting the New York Post-office in its present condition and next in managing the entire department from his seat in the Cabinet, and yet he not only did not kill himself but he is as

stout and rugged a man as the city contains—almost a rustic in his ruddiness and roundness.

"I cannot help that," he said, when he was thus described to himself; I have known too many instances where men have broken down from overwork not to believe that overwork can break men down. It is only the other day that I warned a friend that if he did not rest he would regret it and the very next day he was bedridden with paralysis. It is often the responsibility and worry that accompany work that harm a man worse than the actual work itself, but how are you going to separate the two? When I was post-master here it was the responsibility that weighed most heavily on me. The New York office is the clearing-house for the money order department, and I could not help worrying over my responsibility for that branch of the business. I know men now who are working too hard. They are not content to work in business hours, but keep on at night without diversion, without full rest and without ever clearing their minds of business. They are apt to get what I call 'head-tired,' and when a man's head grows tired, so that he feels it and it hurts him, he is apt to be in a bad way and is certain to to break down if he does not shut down."

THE COLORING OF CANDIES.*

BY ERASTUS G. SMITH,

Professor of Chemistry at Beloit College,
Wisconsin.

My attention has been repeatedly called during the last year or more to the nature of confectionery sold in this and other cities through the state, and particularly to the coloring matters used so freely in their manufacture. Extended

* From the Tenth Report of the State Board of Health of Wisconsin.

analyses have not been made, however desirable they may appear; but many samples have been examined. As these examinations are stretched over a considerable period and were instituted for various reasons, only such records were entered in my laboratory note books as were deemed likely to prove of extraordinary interest. There were, however, three cases to which particular attention should be called. In each of these, highly colored candies were alleged to have produced serious consequences, and in each case a sample of the candy was sent here for chemical analysis by the physician in charge of the case.

In two of these cases Chrome Yellow [neutral Chromate of Lead] was the chief coloring matter, and in the third, Eosine.

In the first of these cases the sample was a bar about two and one-half inches in length of a pasty consistency, coated heavily with chocolate (?) and showing on section a pale yellow color. It was a clear case of Chrome Yellow (Lead Chromate) coloring, as the following figures show. A section of the bar, about one-half inch in length was taken from near the center, and the lead was weighed as the sulphate:

Weight of candy taken,	-	4.293 grammes.
Weight of Lead Sulphate,	-	.0050 grammes.
Equivalent to Chromate of Lead,		.0053 grammes.
<i>i. e.</i> One ounce would contain		0.54 grains

Lead Chromate.

The second sample referred to was bought for a good article of hoarhound candy, but was found to be highly colored with Eosine. (Sodium Tetra-brom-fluorescein.)

This sample had a fair appearance, but a practiced eye would immediately detect suspicious pleo-chlorism on viewing the sticks from different directions.

The third lot of samples, examined in February last, was made up of brilliantly

colored bits of candy, the colors being as follows:

Red, from Cochineal.

Yellow, from Lead Chromate.

Green, from Lead Chromate and some blue pigment; (query, Prussian Blue?)

Blue; small quantity.

Orange, some organic coloring matter, probably an aniline.

Lead Chromate was the most objectionable substance present, and large pieces of candy colored thereby were prominent in the sample. It was therefore determined to examine quantitatively a portion of this particular yellow candy, and the following data are taken from my laboratory note-book.

A sample was taken from a bar about three-quarter inches in diameter, clear in the middle, but with an outer coating of yellow to imitate "lemon candy."

Weight of sample (about $\frac{1}{3}$ oz.), 10,382 grammes.

Weight of Sulphate of Lead found, .0064 grammes.

Equivalent to metallic Lead, .0043 grammes.

Equivalent to Lead Chromate, .0067 grammes.

Or .103 grains.

These results indicate that injurious confectionery is being sold in our markets. The last report of the Massachusetts State Board of Health, July, 1886, page 103, shows that we are not alone in this respect.

A MAN WHO DRINKS CRUDE PETROLEUM AND LIKES IT.*

A wonderful individual exists in Pittsburgh. He is "Greasy Joe" Whelan, who is distinguished from the common herd by his uncontrollable appetite for petroleum, which he drinks as many men do whisky.

On the corner of Pennsylvania avenue and Twelfth street there stands a crazy-looking two-story building, occupied by one J. Gatens, a purchaser and repairer

of oil barrels. To this establishment whole wagon-loads of barrels are brought daily, and it is an important part of Mr. Gatens' business to collect the oil which remains—sometimes in pretty large quantities—in the bottom of the barrels and dispose of it afterward, perhaps to the very individuals through whose hands it has passed once before.

Until recently the presiding genius of Gatens' "barrel shop" was "Greasy Joe."

A red-nosed, blear-eyed, grizzled, rough-bearded, stoop-shouldered, goblin-like four feet and a half of bone, muscle and grease: such is Joe. He is ugliness personified.

Black, slimy, crude petroleum is as grateful to his abnormal stomach as ambrosial nectar to the palates of the gods. "It's as good as whisky, if not better," he is wont to say; and to see him toss off a cupful, roll it about in his mouth, like choice old port, and let it trickle down his throat with evident gusto, one cannot help being convinced that he actually relishes the stuff.

The process by which Joe became inured to the practice of oil-drinking was an easy and natural one. Three-fourths of his days were spent in Gatens' repair shop, the atmosphere of which smells like the combined odors of a dozen refineries. With the exception of tools and paint there was nothing about him but oil. The liquid, thick and slimy, had soaked through and through the floors; it trickled down the walls and dripped lazily from the ceilings. Joe became saturated with it until it appeared to ooze from every pore of his body and permeated his clothing so thoroughly that the application of a match would have sent him heavenward in an instant. Thus it was that he came to be known as "Greasy Joe," an epithet which

* From the *Phila. Times*.

will undoubtedly stick to him to his dying day. Joe's fellow-laborers in the work of draining, mending, cleaning and putting new hoops on the barrels brought to his employer's establishment, hold it as a sacred article of faith that crude oil is a panacea. Did one of them take cold? A glassful of petroleum two or three times a day would fix him up as sound as a dollar. Somebody's liver was disordered. Out came the crude oil and a couple of swallows restored the troublesome organ to its normal condition. Thus, too, with rheumatism, neuralgia, headache, cramps and the whole category of ills that flesh is heir to. Joe when still in his apprenticeship became a firm believer in the curative properties of oil, and in course of time came to look upon it as a comforting and agreeable beverage. For a long time he did his oil tipling in the strictest secrecy; but one day, for the gratification of a group of small boys, he publicly tossed off a goblet of the fluid, and did it with such unmistakable relish that the youngsters were stricken with fear and looked upon him as a minion of the evil one.

Thenceforth Joe's reputation was made. Strangers in the neighborhood were invited to feast their eyes upon him, with the whispered information: "He drinks oil." Common, every-day whisky drinkers regarded him with reverence as a being whose capacity had wonderfully outstripped their own.

In fact, Joe came to be treated as a *rara avis*, and was by many considered as much an honor to Twelfth street and vicinity as the Sphinx and the Pyramids are to their desert location in Egypt. In very truth, as time passed on, he became as impenetrable as the one and as difficult of access as the other.

There are some men in this world who cannot endure to be famous. "Greasy

Joe" is one of them. He never coveted the admiration or the dread of his fellows, and when he realized that such was his portion his spirit rose in revolt. One day, about a month ago, he was missed from his accustomed haunts. It was a nine day's wonder whither Joe had betaken himself. Some thought that he had gone to the oil regions, there to pitch his tent beside a well and pass the remainder of his days in one long and celestial petroleum debauch. Others hinted darkly that he had been carried off by spontaneous combustion.

Everybody said: "I told you so," and laid claim to having always thought that Joe would come to a bad end some of these days. But in the course of time the individual himself reappeared.

One of Joe's old-time fellow workmen, popularly known as "Davy," chatted for awhile the other day with the writer, who happened to drop into the barrel shop in quest of information. Davy was inclined to be taciturn, and clearly did not care to give away any of the secrets of the profession. "Drink oil," said he, in answer to a leading question; "why, yes, I drink oil. Not much of it, though. I only drink it when I'm not feelin' well, an' then it's the boss, I tell you." "Did Joe drink it?" "Why, yes, he drank it." "Much?" "How do I know? I never seed him drink what you'd call heavy, but he always took some when he felt bad."

"He felt bad pretty often, didn't he?" interposed the reporter.

"None o' your business," retorted Davy, ungraciously. "I tell you, though," said he, brightening up, as he changed the subject, "oil is immense for sick folks. It's the only thing in this here world that'll cure consumption, an' all them diseases that doctors can't do nothing with. I seen it myself when I was in the oil regions. Women an' men used to

comes there dyin' by inches, an' after drinkin' the crude oil for a while the color came back into their cheeks an' they went home with bran' new insides, good for twenty years to come. Just wait a minute. You're lookin' pale. I'll fill you up a bottle and you can take it home an' cure yourself if there's anything wrong with you."

DEATH FROM OVERCROWDING.

Although overcrowding is pretty general in manufacturing towns, we seldom hear of a death from this cause. A case has been recently investigated by Mr. Rowbottom, the coroner for Wigan, (says an English medical journal). It transpired at the inquest that the deceased, a young man of twenty-one years of age, was a laborer at some iron-works in the neighborhood, and retired to rest on the night of the 6th inst. in his usual health. He was called early next morning to go to his work, but stated he would not go that day. The other occupants of the room (lodgers) went to their work, and he was left alone. At 9.30 A.M. he complained to the landlady that his throat was sore, and she applied a poultice. At 12.30 noon she sent for Dr. Brady, who at once went to the man, and found the atmosphere of the room in which he was overpowering. The window was opened, and, after examining the man, he came to the conclusion that he was suffering from the effects of mephitic gases; his throat was of an intense purple color, the neck slightly swollen, his general appearance indicated insufficient æration of the blood, and there were spasms at times of laryngismus stridulus. Dr. Brady gave directions as to the treatment and left the house. The man died shortly afterwards. He made an attempt to vomit, fell back

in bed, and died as if choking. Dr. Brady refused a certificate and communicated with the coroner, desiring a second medical man at the post-mortem. The coroner ordered a post-mortem, and asked Mr. Berry to be present with Dr. Brady. The post-mortem appearances were those of poisoning by carbonic acid gas. The trachea was intensely congested, as were also the bronchial tubes. The right side of the heart was filled with very dark fluid blood, the lungs and kidneys were congested, and dark in color. The mucous coat of the stomach was in appearance as if stained with port wine lees. All the organs were healthy, with the exception of this venous congestion. There was nothing else to account for death. It was shown at the inquest that in this house, with two rooms above and two below (and these small rooms), eleven persons lived—a man, his wife, five children, and four grown-up men lodgers. In the room in which Dr. Brady saw the man on his visit, were three beds. The room was 7 ft. high, and 10 ft. 9 in. by 11 ft. 8 in.: making allowances for recesses, and deducting space occupied by furniture, a cubic space of 842 ft. Seven persons had slept in the room, but the belief was that a larger number occupied it. The landlady stated that the deceased had slept in the adjoining room, which was a little less in cubic space, and contained two beds for the lodgers. The jury found a verdict that the deceased died from asphyxia caused by overcrowding. In manufacturing towns like Wigan persons occupy houses and take in lodgers, but, not having these registered, they evade the Lodging Houses Act, and thus escape inspection. The sanitary authority, however, should strive to get houses like this under its control.

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Editorial.

THE GRATIFYING PROGRESS OF HYGIENE.

All great reforms have been proverbially slow of progress. Hence it was but to be expected that the march of sanitarians would be an extremely slow, tedious, up hill process. More especially was it to be expected that the progress of hygiene would be slow, because the acceptance of sanitary dogmas meant the downfall of the favorite popular idea that disease was a "visitation of Providence." But, contrary to expectation and contrary to the general law of new "departures," the march of sanitary science has gone uninterruptedly forward with giant strides, until he who, pausing for a moment on the upward march, looks back over the route that has been traversed, is truly surprised, and thoroughly gratified and satisfied with the progress that has been made. Less than twenty years ago there was not a State Board of Health in this broad land; to-day there are only three or four States without such boards. This

one fact of itself marks unparalleled progress in scientific development, and would alone be cause for congratulation to sanitarians. But, still further, in several States the State Board has an organized army of officials, numbering in one instance nearly three thousand, in another fifteen hundred, and so on, who are engaged in actively and practically putting into daily use the teachings of hygiene.

In the meantime, it is plainly evident to him who reads the daily papers that the public no longer entertain the dark, mediæval, superstitious notion in reference to the causation of disease; but that, on the contrary, they are very much alive, and daily growing more so, to the practically important rôle of hygiene in the prevention of disease. It is one of those popular delusions, so hard to dispel, that the people are indifferent to hygiene, that they will not heed the advice of the sanitarian, that they care not for the science of prevention. It is the fashion to so declare, but it is a mistake. Our experience warrants us in asserting that the educated public fully and firmly believe in hygiene, and is ready to practice its precepts to a reasonably fair extent, and as the masses become educated they also come to believe in it. We find that as soon as an intelligent man or woman gets a clear understanding of what the word hygiene means they are not only willing, but anxious as well, to know all about it. The outlook is excellent; what the past twenty years has brought forth is as nothing when compared to the certain glorious developments of the coming twenty. Let us therefore, with a hasty congratulatory glance backward, set our faces resolutely forward, and, laboring as we have in the past, push resolutely and unfalteringly forward to the beacon light brightly and eternally burning on the altar of Hygeia.

Notes and Comments.

BAD WATER AT LONG BRANCH.

Though the minds of people living in Long Branch, Elberon, and the intermediate and contiguous villages, says the *New York Times*, are wooed by nature from consideration of the many perplexities of life, sorrow floods their souls when thirst drives them to water. Peace flees before the conviction that sickness lurks therein. The water works article is at present the color of an orange, and its taste is like unto adulterated weak tea. As it flows from the hydrant it is thick with sediment, vegetable, animal, and mineral. Private filters cope with this sediment more or less successfully as the filter is good or bad, but the color and taste remain and so does its power to breed sickness.

The Long Branch Water Supply Company owns the water works and the franchise upon which all the beach from Long Branch to Bellevue depends for water. The water supply is drawn from the cedar swamps some 15 miles west of the seashore. There are several springs in these swamps, but most of the water comes from rainfall and the drainage of the surrounding country. A narrow brook flows through the swamps through various windings to the seacoast. There its waters enter artificial ponds close by the water works. Without an attempt at filtration it is admitted to the well in the engine room, pumped into the tower, and distributed through the water mains.

A freshet in the creek during July tore out one of the two dams that interrupted the primeval fall of the creek from the swamp to the water works. But even previous to that time for several weeks the water had been of a character unfit for use. Three years ago John Torrey was Super-

intendent of the works, and he devised a scheme of three filters, to be established between the pumping works and the tower, two of which could be kept in use while the third was cleaned. His zeal in behalf of the community cost him his position, and his successor, having learned wisdom from Torrey's experience, keeps his own counsel, and moves only when he is moved.

In the valley drained by the swamp and creek there are numerous farm-houses, private residences, and cattle yards, with their stables and refuse, but no factories nor slaughter-houses. The rains of this summer have been so frequent and heavy that every foot of the valley slopes has been washed clean of all impurities, which have accumulated in large quantity along the shore of the creek, and the hot sun has helped them to tint and flavor the water.

The effect upon the health of the people has been marked. Men, women, and children have been prostrated with diarrhoea and cramps in such numbers as to breed a pronounced water panic.

The Superintendent and other officials of the Water Supply Company were recently engaged in an inspection of the creek from the works to the source of supply in Cedar Swamp. They have talked considerably about putting in a large filter between the reservoir and the well, but the residents do not expect much to result from the agitation until the State Board of Health compels the Company to do its duty. The Company apparently intends to keep up only a show of agitation until the season is past, when they hope the necessity for the improvement will disappear by natural causes. The works have supplied as much as 1,800,000 gallons of water a day; but for some time they have found about 1,200,000 gallons sufficient.

VERY OLD PENNSYLVANIANS.

Ex-Sheriff Hughes, of Westmoreland county, died a few days ago. Among his neighbors who attended the funeral were Isaac Feters, aged 87; Colonel Eli Berlin, 86; George Kepple, 86; Robert Shields, 85; Major Borland, 83; David Brawley, 83; Solomon Kroppenberger, 83; John Snyder, 82; John Kepple, a brother of George Kepple, 80; Martin Asbaugh, 80. These veterans are all as hearty as bucks, and live within a short distance of one another.

Mrs. Martha Williams, aged 90, attended the funeral of her sister, Mrs. Laura Downing, in Plymouth Township, Luzerne County, recently. Mrs. Downing was 86. Mrs. Williams and Mrs. Downing were daughters of Samuel Carey, who was captured by the Indians at Wyoming, and was held captive by them for six years. He lived to be 93 years old, and was over 80 when his daughter Laura was born.

James Preston, at the age of 92, works in the Turkey Run coal mine at Shenandoah, and no man can do a bigger day's work. He is the father of thirty-six children, thirty-three of whom are boys. He came from Ireland and settled in Schuylkill County before anthracite coal was discovered.

Miss Margaret Heitschu, a wealthy maiden lady of Lancaster died on the 18th ult., aged 91. Her sisters, Mrs. H. H. Dorwart, aged 78, and Miss Sybilla Heitschu, aged 90, were at the funeral. Their father was a prominent business man of Lancaster, and died years ago, aged 90. His daughter, Mrs. Keller, died two years ago, aged 90. Two other daughters and a son died, aged respectively 80, 83 and 85. William, another son, is only 67, while another daughter is still living at the age of 81.

The Rev. Tobias Warner and the Rev. Abraham Martin are preachers of the Mennonite faith in Lancaster County. Mr. Warner is 83 years old, and has preached in one pulpit for nearly fifty years. Mr. Martin is 88 years of age, and has occupied one pulpit forty-five years. Each one of these venerable pastors was absent from his pulpit for the first time recently. They were both prostrated with illness the day before.

THE CAUSE OF DIPHTHERIA.

While the whole history of this disease shows that the only known way in which it is spread is by contagion, (says the *Report of the Wisconsin State Board of Health*,) it is interesting and may be profitable to note, that very recently reports have been made to this office of its occurrence in malignant form in two different localities, the one in Manitowoc county, the other in Jefferson county, the feature common to both, being the presence of swamp lands partially dried, to the exhalations from which, the observers and reporters in both cases attributed the outbreaks, because in neither instance could any history of exposure to contagion be traced, nor were there any cases of the disease away from the vicinity of the lands in question. Instances of the occurrence of diphtheria in the vicinity of partially dried mill-ponds have also been reported, but in these cases there was not clear and definite knowledge of the absence of contagion as a factor. Somewhat similar reports have been made in other reports of Health Boards, the earliest and most circumstantial of which, so far as I know, is to be found in the report of the State Board of Health of California, for 1884-6, from Dr. G. M. Kober, U. S. A., who gives the following instance among others: An outbreak of

diphtheria occurred in a locality on the borders of a large body of swamp land, in the course of which outbreak these facts were noted:—"Not a single case appeared to windward of the swamp. Almost every child and many of the adults living to the leeward of the swamp, were stricken with the disease. The virulence of the disease was in direct ratio to the proximity of the swamp and the exposure to the emanations therefrom, modified, of course, by the individual characteristics of the patient and his surroundings. To the northeast (and leeward) of the swamp, are three canons in the mountains, by which the winds passing over the swamp reach a valley on the other side of the mountain range, only one of these canons being passable for ordinary travel. At the mouths of these canons, and there only, did the disease appear in the valley with which they communicated."

HOW ALDERNEY MILK IS "MADE."

The "*Daily News*" of this city recently published some very interesting articles on the adulteration and manipulation of milk, and among other things it brought to light a trick of the trade by which ordinary milk is made to so closely resemble the rich Alderney article, that it is well-nigh impossible to make the discrimination. The informer thus spoke to the reporter: "I can give you plain and straight common milk or I can make it 'Alderney,' if you prefer. Which will it be? Alderney; all right." The dealer took a small pasteboard box from a closet and from the box drew out a bottle. From the bottle he poured a single drop into the glass. The drop was as red as blood and quickly spread out upon the surface of the milk. Taking a spoon and

stirring the liquid in the glass well, the milkman said:

"There's your pure Alderney milk." The liquid certainly had that rich cream color peculiar to pure Alderney. Into the other glass was poured milk from an Alderney dairy and the inexperienced reporter could not tell which was which.

"You cannot see the difference," continued the dealer, "but any milkman can very quickly. Now I'll show you how these crooked dealers sell skim milk, or the swill milk, for the pure, rich article." He quickly skimmed the cream from the top of a pan of milk, leaving the remainder in the pan a sickly white.

"There is no doubt of that being skimmed milk, is there? Well, I'll make it look as rich as the best Alderney milk you ever saw. Three drops of this blood red stuff is sufficient to do it. Two drops would restore its natural appearance, and the extra drop makes it Alderney."

The two drops were poured in and stirred well. The milk had then taken on a rich, creamy appearance. Another drop was added and the Alderney color promised was given. Not only was the color brought about, but the "body" of the milk seemed to be restored also. As a test the reporter turned aside while the milkman placed the glasses upon another table and after a careful examination was unable to tell which was the pure and which the skimmed milk.

"It is no exaggeration to say that fully two-thirds of the retail milk dealers of Philadelphia use that stuff," added the man, "and hundreds of thousands of people are being fooled by it every day."

FRIED FOOD.

Marion Harland thus writes in the *Journal of Reconstructives*:

Griddle cakes should not be fried at all, but baked on a soap-stone griddle, if

your cook will keep one intact. If on an iron surface, rub it lightly while hot with a bit of salt pork. The cakes should be as dry on the outside as muffins when taken off. For real frying, have plenty of fat, heated gradually to the boiling point. Drop in a bit of bread or dough to test it. If it sinks for a few seconds, then rises to the top and then begins almost directly to color, you may risk whatever may be the subject matter in hand. Put in a few articles at a time, turning them but once, and when of the right shade of brown take them up directly with a split spoon or strainer, then shake and lay in a heated colander to get rid of clinging drops of fat. Potatoes thus treated will not oil the napkin on which they are laid. Fish balls, croquettes, chops, cutlets, sweetbreads, etc., must be rolled in egg, then in crushed cracker, before immersion. The whole croquette family should be moulded hours before they are cooked, that, by stiffening, they may the better resist the soaking grease. Mush, hominy and fish must be coated thickly with flour. The object of this and of the egg and cracker process is to form at the instant of the plunge a crust impervious to the fat, which is the unwholesome element in fried foods. Properly treated, the interior of a fried fish-ball or doughnut is no more indigestible than if it had been baked, provided it is taken from the oleaginous bath as soon as it is done and shaken free of fat.

To sum up the stages of the operation:

1. Prepare the substance to be fried by moulding or trimming, or (as with oysters) drying for the grease proof coating, and apply this before the pan goes on the fire.

2. Heat enough lard, or butter, or dripping, or oil to float the objects and slip them in gently the moment it boils and has been tested, as directed.

3. Keep the heat steady rather than fierce.

4. Take up promptly, shaking and draining off the grease.

5. Serve soon and hot.

LONGEVITY IN THE UNITED STATES.

If there were not in every community (says the *Boston Advertiser*) one or more spared monuments in the form of persons who have reached fullness of years, the conclusion would be that our eager civilization was too much for any reasonable expectancy of attaining a venerable age. Consequently it is a distinct contribution to the literature of the subject for the St. Louis *Globe-Democrat* to devote several columns to facts about aged persons. If these facts have not much scientific value, they at least attest the wonderful vitality to which some Americans attain.

A Gasconade county, Mo., woman, ninety-eight years old, for example, can walk two miles at a time. Another Missourian, at the age of ninety-one, shoots game and wears no glasses. A physician of Chillicothe, in the same State, is eighty-nine and reads the finest print without artificial help. The City Treasurer of East St. Louis is ninety and has never known a sick day. Pierre, Wis., has an authenticated instance of a man reaching the age of one hundred and two. And so runs on the story of extreme age and yet of much activity and hopefulness developed in various parts of the country.

Unquestionably temperament has much to do with this survival. An evenness of disposition carries the person through critical sickness and saves such a well-poised individual from shock, where the sudden hearing of bad news or the witnessing of a distressing accident might

cost another person his life. There are apprehensive men and women who talk of old age by the time they are forty, while the same family may witness youthful spirits, and even the flush of boyhood on the cheeks of one who has passed his fourscore.

The feverish activity of this generation, the race for place and wealth, the impatience with delay, the readiness to sacrifice health maxims in order to take a short cut to success, make a prophecy that these swift-paced individuals will reach old age an exceedingly venturesome prediction. Probably if young men about deciding on a calling should consult a doctor for advice as to the vocation most conducive to longevity, their graves would not open as early; but what about their work? No doubt, if any of the men and women over eighty now living in New England were asked their recipe for attaining old age, the answer would be, in part, work as hard as you can, and think as little as possible of breaking down.

TOFU AND VEGETABLE CHEESE.

W. Mathieu Williams thus writes in the *Gentlemen's Magazine*: "Vegetarians should look to this. Tofu is a curd manufactured from beans in Japan. According to the *Journal of the Society of Arts*, December 24, 1886, 'it approaches more nearly in its composition to animal food than any other vegetable known.' It contains about one-fifth of its weight of fat, and nearly two-fifths of nitrogenous matter. As a beefsteak contains less than one-fifth of its weight of nitrogenous matter (72 per cent. being water,) the tofu must have at least double the nutrient value of beef, and is especially desirable among rice feeding people, rice being deficient in such material. The bean has lately been successfully grown in Germany.

"The Japanese prepare it by soaking the beans in water for twenty-four hours, then grinding them in a stone mill with the purest water attainable, so as to form a thin pulp. The pulp is heated to boiling, when more water is added, and it is boiled again; then more cold water is added, and it is allowed to stand. The liquor is then strained out through a bag, and brine is stirred into it. This effects a coagulation, and the curd is pressed as in making cheese. It is, in fact, a vegetable cheese, and may be used accordingly.

"The fibrous residue left in the bag, after the filtering out of the vegetable casein may be mixed with chaff as food for cattle.

"I have treated our common split peas in a similar manner, and have obtained soluble casein, which I precipitated with acetic acid (see *Chemistry of Cookery*, page 217 to 220). All kinds of peas and beans will yield such soluble casein when thus treated, and most valuable food may thus be obtained free from the woody fibre, which is difficult to digest.

"My experiments were avowedly but preliminary and suggestive; they, however, point to the possibility of a very important industry in the manufacture of a new and most desirable food, viz, vegetable cheese. If I am not altogether mistaken, it may be produced on a large scale at about threepence per pound, and be equal if not superior to the best cheese made in the dairy. As I have shown in the work above quoted, a sheep weighing sixty pounds contains less nutritive matter than twenty pounds of ordinary cheese. This also applies to the vegetable cheese."

OVER-PRESSURE IN AUSTRIAN SCHOOLS.

The Austrian Minister of Public Instruction, has just issued a report, compiled at his special instance (says the

Lancet) on the "Ueberbürdung der Mittelschüler," or the over-pressure prevailing in intermediate schools. Dr. Joseph Heim leads off with a distinct admission that, except for pupils who are unusually favored in mind and body, the Austrian system of middle-class education is chargeable with over-pressure and all its attendant evils. This state of things had long been suspected, and two years ago the Minister of Public Instruction subjected these schools to some wholesome reforms from the purely hygienic point of view, with the result of putting into more prominent relief the harm they do by mental overstrain. The working capacity of the young, it is found, has been greatly exaggerated, and to relieve the *courbature cérébrale* thereby induced, it proposed, among other innovations, to make a better division of the school holidays by giving never less than from twelve to fourteen days respite from work at Christmas and at Easter. The curriculum of study is not blame-worthy, but the method of study (according to the report), is particularly so; and practical reforms are suggested in diminishing or doing away with the abuse of written exercises and that of committing too much to memory. Dr. Heim concludes by suggesting the formation of a committee, to consist of schoolmasters and medical men, with a view to reforming the traditional modes of instruction and to consulting the physical not less than the mental growth of the young. His general report is then followed by four special ones, on which his conclusions are chiefly based. The first of these is by Dr. Adolf Löffler, who finds that the reformer must take special cognizance of the matter of instruction, and, for one thing, reduce its quantity; that a maximum of the hours of school attendance must be fixed; that home tasks must be regulated; and that a less exacting system

of examinations must be devised. The second is by Hans Adler, who deals with the best mode of sparing the eyesight of the scholar. The third is by Dr. Leopold von Schrötter, who discusses the questions of physical development and ailments peculiar to the young; and the fourth and last is by Professor Theodor Meynert, who considers over-pressure in its effects on the nervous system and on the mind. This Austrian official document, in which schoolmaster and physician have worked harmoniously to ascertain the truth, and in which they give their conclusions with caution and calmness, should be welcomed by those among ourselves who are anxious that an all-important, while much agitated subject, should be approached in the spirit of science, correcting abuses where they exist, while withstanding all innovation conceived in panic and brought forth in imprudence.

CORSETS AND TIGHT-LACING.

It has always seemed to us (says the *London Lancet*) to be somewhat of a satire on the work of nature that the female form should be thought to require the support of a corset in order to make it graceful. We observe, therefore, with satisfaction that ladies, and even young ladies, are here and there to be found who have with equal courage and good sense dispensed with this unnecessary article of dress. Among the majority who continue to wear it there are also signs, though less pronounced, of the same healthy tendency. Tight-lacing is viewed with much less favor than formerly. Women as well as men are coming to see that artificial slenderness is no beauty, and indeed the sham and unreason apparent in a figure wantonly contracted must create in all thinking persons a feeling of repugnance which effectually prevents the possibility of admiration.

Victims of this hurtful practice and grievous error in taste are still, however, not uncommon. Only a few days ago an inquest on the body of an elderly female revealed the fact that death was due to the direct consequences of her having the stays too tightly laced. This is by no means the first instance in which the coveted fineness of waist has been thus dearly purchased. It is in fact impossible that this custom can but injure health, for what are its effects? By tight-lacing, which forces together the elastic ribs and narrows the space within the thorax, free action of the lungs is obviously rendered impossible, the liver and heart are displaced, and the great blood vessels unnaturally stretched. The organs placed at a lower level are hardly less affected, and the pressure tells more or less on every important structure between the collar-bone above and the pelvis below. The unfortunate worshipper of a false ideal thus loses with free respiration the due effect of the most powerful force which aids the heart in driving its blood through the body—the force of thoracic suction. Displacement of the heart, moreover, can only result in palpitation, or severer cardiac troubles. Thus it comes to pass that every organ and tissue is under-nourished, digestion is little more than a meaningless term, and healthy life in any part of the body is unknown. This may seem to be forcible language, but it is nevertheless the clothing of facts which it does not merely envelope, but in many cases fits with a strictness not incomparable to the firm embrace of the most fashionably strait corset.

FRENCH WET-NURSES.

The Paris correspondent of the *Philadelphia Press* tells us that immoral and shocking as it may appear, the unmarried

wet-nurse, *fille-mere*, “girl-mother,” as she is called, is preferred to the married one and is more highly recommended by physicians, the usual reasons given being that this kind of nurse will become strongly attached to the child, and that the family will not be troubled with a husband who will come around frequently to demand higher wages for his spouse and otherwise annoy her employers.

As a rule, these nurses are healthy, ignorant women whose sole ambition is to gain a comfortable livelihood with as little effort as possible. Once started upon this career they follow it for life, preferring it to the menial drudgery of service at a rural residence or the more slavish environment on a small and sterile farm. When they obtain a situation, their own infants are sent to their bucolic homes for their mothers or sisters to take care of. Installed as a member of a Parisian household, the wet-nurse considers herself in Paradise. Her professional outfit is purchased for her, the ostentation of her employers deciding whether it be gorgeous, genteel or plain. She revels in the finest delicacies the domestic larder affords; in short, nothing in the line of edibles is too good for her. In due time she goes out with the baby for drives in the Bois and soon learns to hold her head as high as any other of her ilk.

So easy are the duties and so comparatively lucrative the position of a wet-nurse that in many parts of France poor misguided women with nothing but an heroic physique make it a business. So long as they are young they do well in the mercenary sense, but when they get beyond their usefulness as cows, to use the vulgar French name for them, their only alternative is to enter the lists as *bonnes*, or dry-nurses.

Thus the *fille-mere* gains her reward

for not being virtuous. Is it difficult to evolve a moral anent these baleful facts? Or is it necessary to comment upon the deplorable lack of maternal instinct in those French ladies who leave their children under the care of illiterate nurses while they are busy with their visiting books and running the gauntlet of fashionable dissipation?

THE PHYSICALLY DETERIORATING INFLUENCES OF CIVILIZATION.

At a recent meeting of the Anthropological Institute of Great Britain, Dr. George Harley, F. R. S., gave a discourse on the "Relative recuperative bodily powers of man living in a rude, and man living in a highly civilized state," in which he brought forward a number of hitherto unpublished, though mostly well-known facts in support of his contention that the refining influences of civilization had not been altogether an unalloyed boon. Cases were cited by the speaker in support of his view that, while man's physique as well as his mental powers had increased during his evolution from a barbaric condition into one of *bienséance* (his stature and his strength, as well as his length of days, having been increased *pari passu* with this improvement gradually), he has deteriorated in his bodily power, either to resist the lethal effects of injuries, or to recover from them as rapidly and as well as his less favored barbaric ancestors. Nay, more: the cited illustrative cases showed it apparently to be a fact that all the appliances of civilized life which most potently minister to human comfort and human enjoyments have a deleterious enervating effect on the animal frame, as was demonstrated (said Dr. Harley) both by striking examples drawn from gypsy and tramp life, and also from domesticated animals, such

as the sheep, the ox, the horse, and the dog, in all of which species high breeding was shown to conduce to a marked diminution in the bodily recuperative capacity. The speaker further maintained that man universally had naturally a high standard of bodily recuperative power inherent in his constitution, and that the present higher bodily recuperative capacity shown to be possessed by all men living in a rude state, whether in the form of savages, like the South African Kaffir or the North American Red Indian, or the gypsy or tramp wanderer among ourselves, arises from the fact that the refining influences of a higher civilization materially diminish the animal recuperative capacity; and further that, although all men are of the same flesh and blood, their different modes of life and different social habits have induced in them very varied degrees of nerve sensibility, as well as of recuperative bodily power.

EXPECTANCY OF LIFE IN CITIES.

Among the curious things shown by the census of 1880 (says the *Boston Transcript*) are the new data relative to the expectancy of life. It appears from the statistics derived from the combined experience of thirty American life insurance companies, that at the age of 10 years the expectation of life of a healthy white male is 49.99 years. In Massachusetts, however (outside of Boston) this period of expectation is increased to 51.01 years, while in Boston itself it is reduced to 47.49 years. New Jersey makes a better showing than Massachusetts, the expectation in that state being 51.57, which would seem to show that mosquitoes do not necessarily tend to abbreviate life, notwithstanding that they may make it undesirable. The expectancy of life of the aforesaid 10-year-old child in the various principal cities is as follows: Washington

(or rather the whole district of Columbia), 47.05 years; New York, 44.92; Brooklyn, 48.09; Philadelphia, 46.96; Baltimore, 48.50; Cincinnati, 46.96; Chicago, 50.61; St. Louis, 48.25; San Francisco, 42.69; Charleston, S. C., 41.84; New Orleans, 40.09.

Now let us take the other extreme of life. According to the experience of the insurance companies already referred to, the white male who reaches the age of 85 has still 3.40 years to live. In the several places named above the expectation at the age of 85 is respectively as follows: Massachusetts, 5.82; New Jersey, 6.26; District of Columbia, 5.26; Boston, 6.57; New York, 5.69; Brooklyn, 5.53; Philadelphia, 5.29; Baltimore, 6.17; Charleston, 5.13; New Orleans, 5.25; Cincinnati, 5.82; Chicago, 5.85; St. Louis, 8.65; San Francisco, 7.96. It will be seen that, with the exception of Chicago, the child's chances of attaining the average of expectancy are against him in the cities, while the old man who has become toughened to city luxuries, and has learned how to exist without ozone, will do best to remain where he is if he desires to reach the maximum age. This is especially true of New Orleans, where the 10-year-old loses 20 per cent. of expectancy, whereas if he succeed in weathering the storms of early and middle life and reach the age of 85 in the Crescent City, he is given a compensating allowance of 55 per cent. over the average of expectancy.

INCREASE OF ALCOHOLISM IN FRANCE.

A special commission appointed by the French Senate to investigate the above-named subject has drawn up a regular impeachment against the trade in alcohol. During the last ten years the consumption of alcohol in France has increased from

970,000 to 1,500,000 hectolitres. This, however, only represents the officially recognized traffic; the fraudulent and clandestine trade in alcohol cannot be estimated, though it is considerable in amount, and the liquor thus vended must be vile in quality. The number of suicides attributed to excessive consumption of alcohol has multiplied six-fold during the ten years in question—1874 to 1885. There were formerly 137 suicides per annum; there are now 868. In those departments where there has been a notable augmentation in the sale of alcohol, the number of recruits who have proved unfit for military service has increased four-fold. Criminal assaults have also largely multiplied in these same counties. The proportion of patients suffering from insanity due to alcoholism received in public asylums has, on an average, risen from 9 to 16 per cent. during the last ten years. In certain departments, out of the total number of insane from all causes, the proportion given of those who are victims of alcoholism reaches the enormous figure of 21, and even, in one case, of 28 per cent. During the last five years (1881-1885) there have been 51,000 insane received in the public asylums, and of these no less than 7400 cases are said to have been traced to the excessive use of alcohol. Among the accidental deaths recorded, no less than 20 per cent. are attributed to drunkenness; and the birth-rate has also notably decreased in those parts of the country where the use of alcohol has greatly increased.

THE INFLUENCE OF METEOROLOGY ON MEASLES.

Dr. Cameron, in his second quarterly report on the health of the borough of Huddersfield for this year, says the *Lancet*, discusses the high mortality from measles

and the accompanying lung diseases. He reminds his authority that on a former occasion he pointed out that an epidemic of this disease had coincided with a somewhat high barometric pressure, an increasing temperature, considerable variation of day and night temperature, and a scarcity of rain. The poison of measles was, according to his view, prevented by the heavy atmosphere and the absence of wind from getting freely away from the close courts and yards; these courts also lacked the wholesome washing effect of rain, and the infection was kept active by the warmth of day, and the slight condensation produced by the chill of night, and spread rapidly to those who were susceptible of its influence. These conditions, which were characteristic of a similar mortality in 1882, were repeated, some of them in an aggravated form, in 1887. During the second three months of the year the barometer has averaged 30 in., and in none of the thirteen weeks included in that period has it averaged less than 29.6 in. The daily range of temperature has averaged 18°F. , and the total rainfall has been only 3.09 in. Together with such rain as fell during the seventh, ninth, and in the week following the termination of the quarter, there was a marked reduction in the rate of mortality. Latterly whooping-cough seems to have been similarly influenced, and during the quarter as a whole these two diseases caused together a mortality reaching 3.08 per 1000. The details thus contributed are of the greater interest because precise information as to the relation of infectious and other diseases to meteorological conditions is so scanty.

FRUIT AS A FOOD.

No great time has elapsed since we had occasion to make a few remarks on the value of fruit as a form of light diet (says

the *Lancet*), and to refer to a few simple rules which those who partake of it do well to observe. Taken in the morning, fruit is as helpful to digestion as it is refreshing. The newly awakened function finds in it an object of such light labor as will exercise without seriously taxing its energies, and the tissues of the stomach acquire at little cost a gain of nourishment which will sustain those energies in later and more serious operations. It is an excellent plan, with this object in view, to add a little bread to the fruit eaten. While admitting its possession of these valuable qualities, however, and while also agreeing with those who maintain that in summer, when the body is, at all events in many cases, less actively employed than usual, meat may be less, and fruit or vegetables more freely used as a food, we are not prepared to allow that even then an exclusively vegetarian regimen is that most generally advisable. Meat provides us with a means of obtaining albuminoid material, which is indispensable in its most easily assimilable form. It affords us in this material not only an important constituent of tissue growth, but a potent excitant of the whole process of nutrition. It has, therefore, a real, definite, and great value in the ordinary diet of man, and the wholesomeness of fruit combined with farinaceous food as an alternative dietary is not so much an argument in favor of the vegetarian principle, as a proof that seasonable changes in food supply are helpful to the digestive processes and to nutritive changes in the tissues generally.

A CAUSE OF TYPHOID FEVER.

Discussing the distribution of typhoid fever in Oldham, England, Dr. Niven, the medical officer of health, refers to the well known tendency of this disease to prevail in the colder rather than in the

warmer months. In the case of his district he interprets it by explaining that there is a general influence in operation which is for the most part combined with influences acting specially in the winter months. That general influence he describes as either the admission of sewer air into houses by means of defective drain arrangements, or the action of polluted subsoil water, or the two combined. Open doors and windows in summer reduce to a minimum the evils thus resulting. But in the winter, injurious emanations are drawn into dwellings by the aid of internal warmth and of fires, and the foul air is penned in by reason of closed doors and windows. This explanation has often been referred to by various officers of health, and the circumstances described must be regarded as having an important bearing both upon typhoid fever and other conditions of health. Ventilation of houses is as much needed in winter as in summer, and we should like to see (says a foreign exchange) a by-law which requires every house to be built on a site covered with a layer of good cement concrete everywhere adopted and carried out. By such means alone can the suction into dwellings of subsoil air, which is always open to suspicion, be prevented.

CARBOLIC ACID AS A SAFEGUARD AGAINST INSECTS.

Many people do not know how easily they can protect themselves and their children against the bites of gnats and other insects. Weak carbolic acid sponged on the skin and hair, and in some cases the clothing, will drive away the whole tribe. A great many children and not a few adults are tormented throughout the whole summer by minute enemies. We know persons who are afraid of picnics, and even of their own gardens, on this

account. Clothing is an imperfect protection, for we have seen a child whose foot and ankle had been stung through the stocking so seriously that for days she could not wear a leather shoe. All this can be averted according to our experience, and that we believe of many others, by carbolic acid judiciously used. The safest plan is to keep a saturated solution of the acid. The solution cannot contain more than 6 or 7 per cent., and it may be added to water until the latter smells strongly. This may be readily, and with perfect safety, applied with a sponge. We have no doubt that horses and cattle could be protected in the same way from the flies, which sometimes nearly madden them.

THE NEW SANITARY CODE FOR ITALY.

The sanitary interests of the Italian kingdom will henceforth be superintended by a Supreme Council of Health, to consist of a cabinet minister, who will be president; the procurator-general of the Court of Appeal; a jurist; six doctors in medicine and surgery, specially qualified in public hygiene; a chemist; a pharmacist; a veterinary surgeon; three engineers, experts in sanitary architecture; a medico-sanitary inspector for the Army, and a similarly qualified functionary for the Navy; the directors-general of the statistical bureau and mercantile marine. Of these, six at least must be resident in Rome. In every provincial capital there will also be a council of Health, consisting of the prefect, the public prosecutor, a jurist, two doctors of medicine and surgery, a chemist, a pharmacist, a veterinary surgeon, and a sanitary engineer. For each district within the provinces there will be a similarly constituted Board of Health. It has required a very sad and severe lesson to teach Italy the

necessity of sanitation, but, thank God, it has been taught. Let us not be so slow in learning.

THE LIQUOR QUESTION IN SWITZERLAND.

The liquor question has been passed upon in Switzerland, after a practice there of referring laws to a general vote, and it has been decided, 266,539 for and 137,739 against, to make liquor selling a government monopoly. Geneva, the largest city in Switzerland, voted against it; but the rural districts, 18½ out of 20 cantons were solid for the new measure, which carries the principle of revenue from liquor a step further by proposing that all the profits of this most profitable traffic shall go to the State. The Government, as under the Gothenberg, will probably be forced to farm out the business; and Switzerland, like Sweden, will have its brandy king. To most Americans this will seem a step backward; but in Switzerland the opportunity to regulate the traffic, to secure purity in spirits and wines, and to secure a large revenue, are felt to counterbalance all other disadvantages. Of the harm done by free drink in Switzerland there has been in the discussion of the subject no question; but no one proposes prohibition, which, to an European, is an inscrutable suggestion.

THE GLORIOUS CLIMATE OF CALIFORNIA.

The *San Francisco Chronicle* is responsible for the following: "Julius Cæsar!" said the Eastern man to the Californian, as they stood beside the thermometer in the shade, "but this is a most wonderful climate."

"You bet; the greatest in the world."

"It is hot, but I don't see that you can't stand boiling point out here."

"Oh, heat doesn't count in California."

"Now, in New York we melt with 103 in the shade—melt—you can't get air—you can't get anything but heat."

"That's a fact."

"But look at this! Holy smoke! 185 degrees in the shade, and thick woolen clothes, and we're only kind of perspiring."

"That's nothing. Water don't boil in California until about 600 degrees."

"One hundred and eighty-five degrees. If I hadn't seen it with my own eyes I wouldn't have believed it."

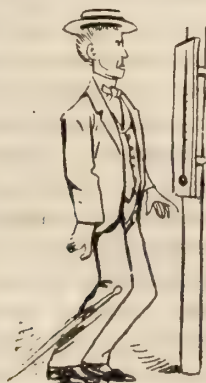
Then the Californian took away the lighted end of his cigar from the mercury bulb, and they sat down to finish their beer.

PERSISTENT YAWNING AND SNEEZING AFTER REMOVAL OF A TOOTH.

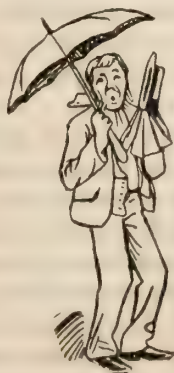
A case of a somewhat remarkable character was recently in the London Temperance Hospital. A girl, fifteen years of age, had the last molar tooth in the lower jaw on the right side removed about six weeks ago. No anæsthetic was administered. She was in perfect health at the time. Half an hour after the operation she began to yawn and has continued to do so constantly since. One yawn succeeds another without interruption and with an interval of two or three seconds. Galvanism had been tried without effect and other remedies previous to admission into the hospital. Three days afterwards the yawning changed to sneezing, and recently she has suffered from constant and rapidly succeeding fits of sneezing, each of which paroxysms appears to begin with a yawn. She seems to have no power of controlling herself, or only to a very slight extent; and if she attempts to do so, the next sneeze is more violent.

THE EFFECT OF MERCURY UPON
THE BLOOD.*From Life.*

"Hot? not a bit of it. A beautiful day!"



"One hundred and five! Who'd have thought it!"



"Well, it's hotter than I thought." 

THE VALUE OF THE SUNFLOWER.

It is stated on the authority of a Cuban journal that since the sunflower has been cultivated in certain swampy districts on the banks of the river Potomac, malarial fever has almost ceased to be endemic there. Similar beneficial results appear also to have followed the cultivation of this plant in the neighborhood of the mouth of the Scheldt in Holland. The editor of the *Monthly Journal of Pharmacy*, who has been engaged in observations on sunflowers, found that during the month of June, 1885, a quarter of an acre of sunflowers exhaled, with a mean temperature of 70° F. at mid-day, exactly 1950 gallons of water in the form of vapor, or sixty-five gallons a day. He attributes the anti-malarial action of the sunflower therefore not only to its properties of absorbing and destroying the malarial miasm and of emitting an abundance of pure oxygen, as taught by other writers, but also to its great capacity, owing to its rapid and vigorous vegetation, of absorbing and utilizing the moisture of the soil in districts which are unfit for human habitation. He likewise suggests that the aromatic odor of the flowers may perhaps be possessed of antiseptic virtues.

THE WORST KIND OF MILK.

An intelligent, practical Scotch farmer, who, while he knows but little about tyrotoxon and the intimate nature of the chemical changes to which milk is liable, yet is blessed with a keen sense of observation, tells us that the very worst kind of milk is that which consists of a mixture of milk that has cooled with that fresh from the cow. It is not an uncommon practice for dairymen to put the morning's milk with that of the night before and send it at once to market. There is good argument to support this

observation of our observant farmer friend. The warm milk will naturally part with some of its heat to that which is cold, thus bringing the whole mass to a temperature very favorable for decomposition. The fact is that milk should never be transported or used until it is thoroughly cooled, as explained by Dr. Vaughn in our last issue.

FRENCH WOMEN IN MALE ATTIRE.

Madame de Valsayre, a lady well known in Paris, has addressed a petition to the Chamber of Deputies asking that women may have freedom to wear male attire. She says: "In all the incidents of human life, whether on sea or land, woman, in consequence of the dress she is obliged to wear, is predestined to become a victim. The catastrophies, fatal or otherwise, which result from this cause are of daily occurrence. The mere thought of the unfortunate beings thus prevented from escaping from the flames of the Opera Comique must suffice to prove that it is not only urgent, but also logical and humane, to abolish the old routine law which prohibits women from wearing masculine attire. That sort of costume, whatever may be said to the contrary, is just as decent as the present fashion of female garments. It has also the advantages of being more healthy. In the name of those who are not slaves to frivolity or luxury I humbly pray you to pass a law enacting full and entire liberality in the matter of women's dress. Such a law would benefit thousands and do no harm to anybody."

STARVATION WAGES IN LONDON.

According to London *Truth*, the "Ruby" match boxes of Bryant & May cost the company 2½d. per 144 boxes.

The women who make them have to find paste, hemp and firing for drying purposes. They can gain, if skillful, ¾d. per hour, or less than 10d. for twelve hours' work. If they work eight hours per diem, and take a holiday on Sundays, they would realize the handsome salary of 3s. per week. The company pays its shareholders above 20 per cent. dividend. Such dividends must encourage luxurious idleness among the shareholders, which is certainly not conducive to health and longevity; while upon such wages it is simply impossible for any one to maintain a healthy existence.

A PROBABLE CAUSE OF IMPURE WATER IN VILLAGES.

It not infrequently happens that typhoid fever and other diseases that may be attributed to foul water will occur in villages where well water is not used, and where the public supply is supposed to be free from pollution. Cesspool contamination being out of the question, these cases often seem very mysterious. It has been recently suggested to us that the water may be rendered impure in the following way: After a heavy rain and freshet, the creek or pond from which the village derives its water is apt to be muddy, and this mud, of course, contains more or less organic matter. Pumped into the pipes in this condition, the organic matter will deposit in the pipes on a level and will there decompose and may thus contaminate the water. This is a possible danger not to be lost sight of. The remedy will be found in not using the pumps during or shortly after a freshet, to render which possible a storage reservoir will be necessary, in addition to which a settling reservoir or the passage of the water through good filter beds before it is delivered to the consumer will be additional safeguards.

SEEING THE SERPENT.

From Life.

The Deacon goes fishing and, by using proper bait, catches the sea-serpent.



AN OLD MAN'S MIGHTY MUSCLE.

General Favrat possessed enormous bodily strength even in his old age. Feeling ill one day Favrat sent for the doctor. As the latter was sitting by the bedside, the old warrior began to lament; "Ah, dear doctor, I am not the man I was; you can't imagine how weak I am getting; look here * * *" and with these words he grasped with his right

hand one of the legs of the chair on which the doctor was sitting, and lifted both the chair and its occupant a couple of feet from the ground. "You see it takes quite an effort."—*Le Monde Illustré*.

AN AWFUL REVENGE.

We cannot vouch for the following which we note from the *New York Sun*: A dreadful story is told of a Chilian of Los Andes. He had a grudge against a neighbor, and when small-pox recently appeared in the province he obtained a number of dried pustules and put them inside a plug of tobacco, which he placed where the people he hated were likely to see it. The neighbors found it, made cigarettes from it and smoked them. A few days afterward small-pox broke out in the house, and with such virulence that no one of the family escaped. The fiend was attacked with the disease a few days afterward, and died after confessing his crime.

CLEANSING THE HANDS.

Upon this subject, Dr. M. Vogel, of Eisleben, writes (*Allgemeine med. Central-Zeitung*) that he has noticed that copper-smiths, tinsmiths, etc., whose hands become covered with a dirt from working in oxides and acids, that cannot be removed by ordinary means, first rub their hands with warm oil, and when this has thoroughly penetrated, rub them with powdered borax. Subsequent washing with soap and water makes the hands perfectly clean. He advises those who have to use carbolic acid to go through the process above described first, and claims that in this way (1) disinfection is more thorough; (2) the hands are made purer than it is possible to make them by soap alone; (3) the hands remain soft and free from troublesome, rough epidermic scales, and the odor of carbolic acid

is destroyed; (4) the uncomfortable anæsthesia of the hands is avoided after washing with carbolic acid.

CONTAGION IN PUBLIC BATHS.

An inquest was recently held in New York in the case of a 13 year-old boy who died, it is charged, from erysipelas contracted in the public bath at the foot of East One Hundred and Twelfth Street. The medical testimony showed that erysipelas and other dangerous diseases are frequently contracted at the public baths, particularly at low tide. The jury found a verdict in accordance with the evidence and recommended that a physician be stationed at each public bath, and that persons suffering from contagious diseases be prohibited from using the baths. It was recommended that a physician should be attached to each bath.

SANITATION IN SHEFFIELD.

Special care was given to the flushing of the sewers in Sheffield, England, during the late hot and dry weather. Under Dr. Sinclair White's supervision, ordinary water-barrels holding some 250 gallons were pierced with an opening about eight inches in diameter, and round this was fastened a species of leather bag, the open end of which was fitted into the man-hole of the sewer. By the turn of a lever the whole contents of the barrel were suddenly let off into the sewer and in this way an effective flush was provided in a simple and inexpensive manner.

MILK AND CONSUMPTION.

In a paper read at the recent meeting of the Yorkshire Association of Medical Officers of Health, by Dr. Mason (Hull), (says the *Med. and Surg. Reporter*) he expressed the opinion that milk which

had been obtained from cows affected with tuberculosis would convey consumption if supplied to human beings. The President said it was very important that tuberculosis should be included in the list of contagious diseases by the Privy Council, as consumption, which in his opinion was preventable, destroyed more people in a year than all the contagious diseases put together.

THE CHOLERA.

According to the *Lancet*, August 6, "three fatal cases of cholera are officially reported as having occurred this week at Malta. The authorities appear to be doing what they can to prevent the spread of the disease by removing suspicious cases to the lazaretto, and by thoroughly cleaning out the houses. In consequence of the existence of the malady on the island, quarantine is imposed at Gibraltar and Madrid on vessels arriving thence. At Catania the disease during the last week has not, it appears, recorded daily. The disease has extended to the prison and monasteries. In the provincial towns (especially at Anderno, Paterno, Francofonte, and Cerami) the epidemic seems on the increase, whilst more favorable reports come from Syracuse and Calabria. According to a recent telegram from Bombay, cholera prevails to a serious extent at Peshawur, where 300 deaths occurred from the disease during July."

CHROME YELLOW IN PITTSBURG.

It would seem that in Pittsburg, as in our own city, the bakers are either conscienceless or densely ignorant with a decided leaning towards criminality in the latter case; for despite the great notoriety that has been given to the crooked and dangerous methods of the Philadelphia

bakers, the daily papers report that many persons are being poisoned by confectionery in Pittsburg. It is not positively stated, but it is presumed that the poisonous agent is chrome yellow, used there, as here, for coloring purposes.

A SYMPTOM OF NERVOUS EXHAUSTION.



"It must be nervousness, doctor. There is nothing broken in me, but I am losing my memory. Why, see here, I found in my wife's chiffonnier a bundle of love letters, and I don't remember at all, having written them."—*From Le Monde Comique.*

THE RAT IN THE SPRING.

We recently went to a farm that we have been visiting for some years, one of the principal attractions of which was the presence of a magnificent spring of the purest and coolest water. Differing from our other visits, the family all complained of sick stomach soon after reaching the farm. After a time the children would complain of pain in the stomach immediately after taking a drink of water. Upon looking into the water one day, we saw white masses which, upon closer

examination, turned out to be worms. Here, we thought, was a clue to the mystery. Examination revealed that a rat caught in the spring house had succeeded in dragging his trap under the front wall of the house and into the water, as it flowed out, where it was hidden from ordinary view. Here he died and decomposed, and the foul water and mysterious sickness was clear as day. The carelessness of the farmer had caused the trouble. The spring house and the water-trough without were thoroughly cleaned out and the water well saturated with muriated tincture of iron, and there has been no further trouble.

LONGEVITY IN RUSSIA.

A woman named Sophia Masluchenoff has recently died in Kharkoff, at the age of 122. Up to the time of her death she enjoyed good health, and had an excellent memory. A medical man practicing at Novo Baiazet writes to the *Vratch* that there is a peasant of the name of Mamed in the village of Beiok Mazra who is now about 122. He has good health and very fair eyesight. He is an exceedingly good walker. In his mouth are five sound teeth.

HYPNOTISM IN FRANCE.

Hypnotism is said to be making great advances in France, where people are now being mesmerised for all sorts of diseases, and even bad habits. The latest outcome has been the attempted curing of the drink habit by what is called "suggestion;" the patient, while "under control," being ordered to avoid intoxicating liquors of all kinds, and it is claimed that success has been obtained in this respect.

INTEMPERANCE IN BELGIUM.

A law consisting of sixteen articles has just been passed in Belgium with the object of checking alcoholic excesses. One of the clauses provides for the periodical examination of the character of the holders of licenses and their mode of doing business, and another clause prohibits the giving of credit for drink.

TO TEST EGGS.

An exchange says that a new way has been found to test the freshness of eggs. Wipe the large end of an egg quite clean, and then touch the tip of the tongue to the central part of this big end. If the egg is good there will be a little warm spot inside the egg, which will be plainly perceptible to the tongue.

CARDINAL MANNING PREFERS TO WALK.

It is reported that Cardinal Manning objects to a carriage and walks whenever his health permits. He says that when cardinals went about in fine carriages they generally went to the devil, and we may add that they were, doubtless, troubled greatly with dyspepsia and gout.

THE YELLOW FEVER SCARE.

The appearance of yellow fever at Key West, says the *Press*, should scare people badly—not too badly, but just badly enough to teach them the importance of renewed sanitary precautions against any northward advance of the dreadful pestilence. An ounce of prevention is worth a whole colony of convalescent hospitals.

THE DISEASE OF POVERTY.

"Poverty," says Father McGlynn, "is a disease." It can be cured (says *The Press*) by scratching the surface of the earth in the neighborhood with a hoe.

Obituary.

EDWARD WILLIAM GERMER, M.D.

With the most profound regret and genuine sorrow, we are called upon to record the death, at Erie, Pa., on August 22, of Dr. E. W. Germer, late President of our State Board of Health. There never was a more earnest, hard-working, or tireless Sanitarian than our late beloved chief officer. Those who enjoyed the pleasure of a personal acquaintance with Dr. Germer, thoroughly appreciate the sterling honesty and straightforward directness of his nature and his purposes. In his regretted death Sanitarians have surely lost one of their most earnest co-workers, and the city of Erie a Health Officer like unto whom another will be hard to find. Dr. Germer was born in Altsbrischach, Baden, Germany, and graduated in medicine at the Vienna University, in 1859. During the Baden revolution he was among the insurgents and was severely wounded. Coming to Erie, he engaged in the practice of medicine. When the small-pox scourge developed in Erie, he was nurse, physician, undertaker and clergyman.

PROFESSOR N. A. RANDOLPH, M. D.

Dr. N. Archer Randolph, late Professor of Hygiene in the University of Pennsylvania and one of the editors of the *Medical and Surgical Reporter* died suddenly of heart disease, while bathing in the ocean, on Sunday, August 21st. Dr. Randolph was, admittedly, one of the brightest and most promising of the younger members of our profession. Though less than thirty years of age, he had earned a reputation as a writer, a lecturer and an original investigator that is enjoyed by but few men young or old. As he had developed a taste for sanitary research, and gave practical promise of successful achievements in this direction, Dr. Randolph's untimely death is an especially severe blow to the cause of hygiene. It can be said with thorough truthfulness that this regretted death leaves a veritable void that cannot be filled in a hurry.

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Communications.

HYGIENIC REPORT OF THE INTERNATIONAL MEDICAL CONGRESS.

[For the following report from the Ninth International Medical Congress, held at Washington, D. C., Sept. 5, 6, 7, 8, 9 and 10th, 1887, we are indebted to advance slips supplied by *The Medical Record*, of New York, from its special report.]

Dr. Josef Körösi, Director of the Communal Statistics of Budapesth, Hungary, read a paper on

THE PREVENTIVE POWER OF VACCINATION, with a critical review of the vaccinal statistics. After gathering all the different modes of argumentation used up to the present time to attack or to defend the protective power of vaccination, he arrived at the result that the statistical base of these proofs is much weaker than is generally supposed by men of science who could not enter into an examination of the value of the different statistical methods. Even when the direct proof could be furnished, and even when we would find in this way that the morbidity or mortality of the non-vaccinated is the greater one, the anti-vaccinators reply that the whole of the non-vaccinated represents a weaker totality, consisting of the poorer elements, the sick and weaker children; and that this totality is naturally more exposed to get any sickness,

but not in consequence of the lack of vital powers—an argument which threatens to subvert all vaccinal statistics.

Mr. Körösi shows us that this difficulty can be settled. If we knew what is, for instance, the general lethality (Mr. Körösi distinguishes between mortality and lethality. Mortality is the chance for each living person to die; lethality is the chance for those who are already sick to die. The two notions are widely different, but, notwithstanding, often confounded. The mortality of small-pox, for instance, rose to one per cent., the lethality might rise to sixty or seventy per cent.) of the non-vaccinated, we could learn whether their special small-pox lethality is greater; this difference ought to be attributed exclusively to the lack of vaccination. But to ascertain the general lethality of the vaccinated and non-vaccinated people, it would be necessary that the hospitals should state, not only for the small-pox patients, but also for each case of sickness—even the surgical cases not excluded—whether they were vaccinated or not. This innovation was introduced in 1886, at the instigation of Mr. Körösi, in nineteen hospitals of Budapesth and of provincial cities in Hungary. Here the results of the first year's observation, embracing more than twenty thousand cases, showed the general lethality of the vaccinated patients to be eight per cent., and that of the non-vaccinated thirteen per cent.

Thus the ascertainment of the anti-vaccinators, that among the non-vaccinated the lethality is probably a greater one, is found to be true. But among the small-pox patients the lethality of the non-vaccinated rose to 6.66 per cent.; the lethality of the non-vaccinated should thus represent about ten per cent., but in fact that lethality is not less than 49.68 per cent. No doubt it was wrong to regard the whole of this increase (nearly eight hundred per cent.) as the consequence of the non-vaccination. The result is a product of two factors; at one hand of the weaker constitution of the non-vaccinated, and on the other hand of the lack of vaccination. Knowing now the value of one factor, we can calculate what has to be attributed to the other. So we can state that for the non-vaccinated small-pox patients the chance of dying is raised *exclusively by the lack of vaccination* to five hundred per cent,

The same observation made it possible to state also in what degree the morbidity of the non-vaccinated is raised. The result is that the lack of vaccination causes three and a half times more cases of small-pox.

To apply the new method on the mortality, it would be required that at each case of death—and not, as is usual, only at the deaths caused by small-pox—it should be stated whether the person was vaccinated or not. This new regulation has been introduced at Budı-Pesth since 1886; the coroners have to inquire the fact regarding vaccination in each case of death. As also nine other Hungarian cities agree to introduce this new regulation, the observations of Mr. Körösi embrace a population of 717,195 persons. The results of the first year show that the chance to die by small-pox is raised by six hundred per cent. for each non-vaccinated person exclusively in consequence of the

lack of vaccination. This new and fruitful method of investigation has finally been applied also to the very important problems of inoculation of syphilis, erysipelas, tuberculosis, etc. In the ordinary way of vaccination statistics, it is nearly impossible to answer this question. If a man who has been vaccinated in his childhood later gets tuberculosis, how could we know whether his sickness had been caused by vaccination or any other cause? But the new method furnishes the answer. If tuberculosis, syphilis, etc., have been caused by inoculation we ought to find among the vaccinated people more cases than among the non-vaccinated. It is now found that—at least in this first year of observation—there was to be found no influence of vaccination upon syphilis or tuberculosis. But what he found was that for the children the number of the cutaneous diseases is raised by vaccination, but only by thirteen per cent. Making up now the balance of vaccination and counting its benefits on the credit, its damages on the debit side, it is found that among a population like that of the United States the vaccination would save annually 120,000 lives, while the number of children dying from cutaneous diseases, etc., caused by vaccination, might make 300, so that the balance is an extremely favorable one. The vaccination is an operation, but who would prohibit a life-saving operation where the chances of danger are so extremely few as above mentioned?

Mr. Körösi finished his paper with the remark that after having now furnished direct answers on the protective power of vaccination, we might safely extinguish doubts about the blessings of Jenner's important discovery, which, after the ingenious generalizations of Pasteur, has lost the character of an inconceivable and quite extraordinary appearance, and

which must be regarded as one of the most beneficial results of happy empiricism and science.

Dr. C. A. Leale, of New York, expressed himself as greatly interested in the paper, especially for the valuable statistics, evidently the result of so much patient labor. He referred to a commission which had been appointed under his supervision to inquire after the health of the sick children in New York, with the result that there was not a case reported which had had small-pox. This he attributes to the good virus and enforcement of vaccination among all classes.

Twenty years ago, he was called to investigate two cases of death alleged to be the result of vaccination, but these were evidently due to erysipelas due to a scratch; this was rendered more positive, as others were vaccinated with the same virus without harm. He once saw, at the College of Physicians and Surgeons, a child where it was certified that the child was suffering from the secondary stages of syphilis due to vaccination.

Dr. W. M. Whitmarsh, of England, inquired what virus was used, humanized or bovine.

Dr. Körösi said it depended upon the physician.

Dr. John Lynch, of Baltimore, said that it was only cranks who will contend that vaccination does not prevent and modify small-pox. Animal virus will always be safe and ought always to be used.

Dr. William Waugh, of Philadelphia, said that statistics ought to be read in the light of personal experience. In a few cases abscesses would occur. He knew of one case of destruction of the eye from the child transferring the matter into it from the arm.

A vote of thanks was extended to Dr. Körösi, and a committee appointed to consider his paper.

Mr. Körösi said that statistics reported against vaccination were greatly falsified.

Dr. W. M. Whitmarsh, London, England, read papers on

VACCINATION AND PASTEUR'S TREATMENT.

He first considered the subject of vaccination, giving a *résumé* of its history from the time of Jenner. He was not in a position, even from a very large experience, to state that vaccination is a preventative against variola, although many believe it to be so. Vaccination does, however, lessen the liability, even though it may not give a complete immunity from the disease. Forty years ago sixty per cent. of the people in England were to be seen pitted by small-pox, while at the present day the e is hardly one per cent.

In England it is compulsory that all children over three months old shall be vaccinated. Such a law being in vogue, it is the duty of the State to use special care in the selecting of good lymph. This they evidently have not done, the authorities at present depending upon humanized virus, which they deal out gratuitously to the poor.

That vaccination may transmit disease is conclusively proven in the case of Dr. Cary, who syphilized himself in endeavoring to prove that such a transmission was impossible. Again, there were the instances of the large number of children in Sweden, and the body of soldiers in Algiers, who were similarly infected.

Educate people up to the fact that vaccination, when properly performed, is a good measure, and then their common sense will make them adopt it. During the year ending September, 1885, there were in England 2,806 persons prosecuted for refusing to comply with the law and be vaccinated.

As to how many punctures should be made, and the frequency with which the vaccination should be repeated, there is

a variety of opinions. It seems probable that seven years is the longest time allowable before revaccinating.

PASTEUR'S METHOD.

In the paper entitled "Pasteur's Treatment" he reviewed very elaborately the method and principle involved in the preparation of the virus for inoculation. The various instruments used were presented, and their use explained; also a solution, hermetically sealed, containing the prepared virus. Sterilized beef tea is the vehicle used to contain the virus.

As to Pasteur, he is undoubtedly a first-class scientific chemist, but doubtless he knows little of the art of surgery or the science of medicine. So far as his operations are directed he is constantly changing his methods, thereby showing that he is somewhat doubtful of his stand-points.

It is proved without doubt that dogs shut up in a room and given but a small quantity of water will go mad. In the cases presented and operated upon in Pasteur's laboratory it is extremely doubtful as to whether the patients have had hydrophobia, and consequently it is difficult to determine the curative efficacy of his inoculations. Pasteur originated a disease in rabbits, which he called rabies. It is important, since some of his cases have been fatal, that the disease be not originated by this process of treatment in a person supposed to be, though not actually, suffering from the disease.

There were cases in which Pasteur's treatment had failed, even in a case in which there had been no delay in coming under the *treatment*.

The only way to settle the question is by the means employed fifty years ago in reference to small pox, and that was upon convicts, allowing them their choice between their sentence and becoming the subject of experimentation.

It is also necessary to enforce more

stringent laws in reference to dogs. They ought to be registered, muzzled, and more carefully looked after by examining veterinary surgeons.

Great credit is due to Pasteur for his earnest labors; and it is to be hoped that, if he has not already, he may eventually make a new discovery.

Dr. C. A. Leale, New York city, expressed his great interest in the papers, and spoke on the latter. As medical officer for several large benevolent institutions for sick children he had coming under his observation from 18,000 to 20,000 sick children annually. These children were sent from all parts of the city, and all were carefully examined by competent medical men. As these children are only the sick ones of the families, they represent the number taken from at least 100,000 children in the city and surrounding places. He had never seen, or had reported to him, a single case of hydrophobia, although hundreds of these children had at different times been bitten by dogs. He had had similar experience in dispensary practice.

He is convinced that much harm has been done by unnecessarily exciting those bitten. It is to be sincerely hoped that the profession will not, with our present knowledge, resort to Pasteur's method of inoculation.

Dr. Wm. Welch, Philadelphia, Pa., said: I believe vaccination possesses the power of absolutely preventing small-pox. To be entirely free from danger it must be recently and properly done, and under such circumstances he had never seen any bad result. In his hospital experience he had had 5,000 cases come under his observation, and after vaccination he allowed attendants to wait upon the sick patients without their contracting the disease. Humanized virus is preferable, especially such as has been long humanized through

several inoculations. It is well, with long humanized virus, to make several inoculations, as virus thus attenuated does not make so profound an impression.

As to durability, it does run out. It was noticeable that among the cases admitted there were no, or very few, children brought in with the disease who had been vaccinated. One of these died.

The dangers of vaccination are two: syphilis and erysipelas—the latter often caused by carelessness on the part of the physician.

Dr. J. A. S. Grant (Bey) of Cairo, read a paper with the title,

THE HISTORY OF HYGIENE IN MODERN EGYPT,

in which he discussed the methods of hygiene as practiced by the Egyptians under the Viceroy Mohammed Ali and under the Khedive Tewfik Pasha, and as influenced by English dominion; to this he added some critical remarks and practical suggestions.

Dr. Grant also read a paper,

DENGUE IN SYRIA,

written by Dr. John Montabet, in which and also from the discussion, it appeared that there was no essential difference as it occurs in that country and in Texas.

THE RELATION OF STATE MEDICINE TO MEDICAL JURISPRUDENCE

was the title of a paper read by Dr. W. L. Schenck, of Boise City, Kansas.

Dr. Richard H. Day, of Baton Rouge, La., read a paper in which he made

A REPORT OF AN INQUIRY INTO THE FACTS RELATING TO THE EFFECTS OF OVERFLOW OF THE MISSISSIPPI RIVER.

The paper contains facts and deductions obtained by addressing letters of inquiry to five hundred physicians residing in Southern localities. It shows (1) that overflows, as a general rule, are injurious to the public health; (2) that they are more or less injurious according

as the inundations are late or early in the season, and whether of long or short duration; (3) that their evil effects upon health are lessened or entirely antagonized by good natural or artificial drainage, and by copious showers of rain occurring during the period of subsidence of the waters; (4) that rice culture is inimical to health only by reason of the improper and insanitary manner of its cultivation; (5) that, as a rule, it is perhaps true that the colored race is less susceptible to the injurious effects of overflows, and of marshy and malarial soils, than the white race. The writer then advises:

First.—The use of rain-water, stored in large cisterns, both for drinking and cooking purposes.

Second.—That all swamp and wet soils subject to overflows, before being cultivated or settled upon, be cleaned of trees, underbrush, etc., to admit freely the sun's rays and the free circulation of the winds, and that a thorough drainage be effected, so that rapid drainage and drying of the soil be not impeded.

Third.—That in the culture of rice, the common plan of keeping the fields covered for long intervals with stagnant water should be avoided, and that, in lieu thereof, frequent irrigation with fresher and purer water should be adopted, the growing crop being supplied thus as often as needed, and ditches so constructed as to let off the superincumbent water rapidly.

Fourth.—That to promote the health of laborers and residents in the river-deltas and lowlands the dwellings should be not less than four feet from the ground, the floors laid tight, and the doors and windows arranged to afford free ventilation, with galleries on all sides wide enough to prevent beating rains from wetting the rooms; that the houses should be erected on elevated ridges, so

that water will not settle under or around them; that only a few shade trees be allowed to grow to break the force of the direct rays of the sun, and all brush and undergrowth be removed, so as to facilitate the free movement of currents of atmosphere.

Finally, the writer advises the importance of rigid cleanliness of person and surroundings, and strict observance of general sanitary rules. The paper further showed that under improved methods of rice culture and management of lands subject to overflows, the frequency and virulence of disease incident to these localities had been notably diminished.

VITAL STATISTICS.

The following resolutions, submitted by the President of the section on climatology and demography, were discussed and after verbal amendments, unanimously adopted:

Resolved, That in the opinion of the Section on Medical Climatology and Demography of the Ninth International Medical Congress, assembled in the city of Washington, September 5-10, 1887, it is important there should be established in every country, a national department, bureau, or commission for the record of vital statistics upon a uniform basis, to include not only accurate returns of births and deaths, but the results of collective investigation by government officials of facts bearing upon the natural history of disease as manifested among men, women, and children separately, especially with regard to climatic and other discoverable causes of the several forms of disease—race, occupation, and residence being included—that necessary preventative measures may be determined and enforced for the preservation of the public health.

Resolved, That the Secretary-General be requested to have the expression communicated to the several governments.

Dr. Charles Denison, of Denver, Col., read a paper on

THE PREFERABLE CLIMATE FOR PHTHISIS.

The paper was elaborately illustrated by maps, diagrams, and tables. Dr. Denison believes that the climate to be preferred for the great majority of consumptives in the United States varies from between fifteen hundred feet elevation in the North in winter to ten thousand feet in the Southern portion in Summer. Certain contraindications exist against sending consumptive patients to high altitudes. The most prominent of these are advanced age of the individual; an excitable, nervous temperament; valvular lesions, with rapid action of the heart; marked and extensive emphysema; pneumothorax and hydro-pneumothorax; active pneumonia or hæmoptysis; high bodily temperature; extensive involvement of lung-tissue, and similar conditions.

He takes the affirmative side of the following five divisions named in the order of their relative importance: (1) Dryness as to moisture; (2) coolness or cold preferable to warmth or heat; (3) rarefaction as opposed to sea-level pressure; (4) sunshine as opposed to cloudiness; (5) variability of temperature as opposed to equability.

Dr. John William Moore, of Dublin, Ireland, then read a paper on

THE SEASONAL PREVALENCE OF PNEUMONIA.

The conclusions—pneumonia has claims to consideration as a specific fever on the following grounds:

1. Its not infrequent epidemic prevalence, which is beyond dispute.
2. Its proved infectiveness.
3. Its occasional pythogenic origin in many cases.
4. Its mode of onset or "invasion," which exactly resembles that of the recognized specific fevers.

5. The appearance of constitutional symptoms before the development of local signs or symptoms.

6. The critical termination of the febrile movement in uncomplicated cases.

7. The presence of local epiphenomena in connection with the skin, as herpes, taches bleuâtres, and desquamation.

8. The development of sequelæ in some cases, such as nephritis, followed by renal dropsy and other conditions.

9. The discovery of a probable pathogenic bacillus, to which analogy points as pathognomonic.

Dr. Moore concludes his paper in these words: "The day is seemingly not far distant when we shall speak of pneumonic fever in precisely the same way as we use the term enteric fever at present; that is, to signify a zymotic or specific blood-disease, manifesting itself after the lapse of a certain time—the period of incubation—by physical phenomena, objective and subjective, connected in this instance with the lungs."

THE RELATIONS OF CERTAIN METEOROLOGICAL CONDITIONS TO ACUTE DISEASES OF THE LUNGS AND AIR PASSAGES.

Dr. Henry B. Baker, of Lansing, Mich., read a paper on the above subject, which was illustrated with diagrams that showed curves for influenza, tonsillitis, croup, bronchitis and pneumonia, which follow the curve for atmospheric temperature with surprising closeness.

He suggests that the explanation of the causation of these diseases has not been grasped before because one of the principal facts has not been apprehended, namely, the fact that cold air is always dry air; on the contrary, it has been generally stated that when these diseases occur the air is cold and damp. He explains that while the cold air is damp relatively, it is always absolutely dry, and he thinks that its bad effects on the air

passages are mainly through its drying effects, which can best be appreciated by reflecting that each cubic foot of air inhaled at the temperature of zero, Fahr., can contain only one-half grain of vapor, while when exhaled it is nearly saturated at a temperature of about 98° F., and therefore contains about eighteen and one-half grains of vapor, about eighteen grains of which have been abstracted from the air passages. Thus cold air, falling upon susceptible surfaces, tends to produce an abnormal dryness which may be followed by irritation and suppuration. He claims that coryza is sometimes so caused. Under some conditions the nasal surfaces are not susceptible to drying, the fluids being supplied in increased quantity to meet the increased demand made by the inhalation of cold air. In that case an unusual evaporation of the fluid leaves behind an unusual quantity of non-volatile salts of the blood, such as sodium chloride, and an unusual irritation results; he thinks influenza is the name commonly given to this condition.

The effects which the inhalation of cold air have on the bronchial surfaces depend greatly upon how the upper air-passages have responded to the increased demand for fluids; because, if they do not supply the moisture, it must be supplied by the bronchial surfaces; in which case bronchitis results. Finally, if the demands for moisture made by cold air are not met until the air-cells are reached, pneumonia is produced.

He refers to statistics which he has published, showing that even the rise and fall of such contagious diseases as scarlet fever, diphtheria, and small-pox follow the same laws shown to control in the acute diseases of the air-passages, and he offers the explanation that the irritations and exudations in the air-passages, caused by the inhalation of cold dry air,

supply a nidus for the contagia, and are thus the predisposing causes of those diseases. As to whether or not pneumonia is a contagious disease he offers no evidence except that nearly all of the phenomena seem to be accounted for without the necessity of supposing a special contagium. For the abnormal accumulation of the non-volatile salts of blood through evaporation of the fluids in the air-cells, so as to cause inflammation and exudation, time is required; therefore, he does not believe that a sudden and short exposure to cold can ordinarily produce pneumonia, except the short exposure follow or precede somewhat prolonged inhalation of cold dry air; although he thinks that lobar pneumonia may have just that causation, the reason for the chill and for the limitation of the area of the exudation being the disturbance of the nervous equilibrium associated with the more or less complete paralysis of the small blood vessels in that part of the lungs supplied by one particular nerve, some or all the endings of reflexions of which have been suddenly exposed to the enervating influence of warmth following the exposure to cold.

Dr. William Welch, of Philadelphia, Pa., read a paper on

VACCINATION DURING THE INCUBATION PERIOD OF VARIOLA.

The author endeavored to show that vaccination during the incubation period of variola has, at least in his own hands, given gratifying results, preventing or modifying the small-pox eruption. The contrary view he believes to be unsupported by facts and not tenable.

Vaccination during the initial stage is valueless. If it be performed very early in the incubation stage it exerts a modifying influence and may prevent the attack altogether.

Vaccinia does not begin to exert its

effect until the formation of the areola about the vesicles.

It must not be long delayed after the contagion has been received in the system if favorable results are expected. The character of the vesicle has much to do with the protection secured. When the vesicles are imperfectly formed or retarded the efficacy is to be feared. Animal lymph is too unreliable. Fresh, eight-day lymph, from a typical vaccine vesicle, is to be preferred.

By numerous insertions of the virus we are more sure of good results. He has no doubt the process of vaccinia is hastened by multiple insertions.

He has made observations upon 144 cases, from which he has been led to believe that vaccination in the incubation period gives a certain immunity from variola.

Dr. Cundell Juler, of Cincinnati, O., said, he believed that the lymph from the vesicle itself gave an immunity which the crust did not, and when used he did not consider revaccination necessary, but with the crust it was. The lancet should be kept scrupulously clean.

Dr. Rogers Parker, of Liverpool, Eng., a public vaccinator for the city of Liverpool, said that in the large cities of England human lymph was usually employed. Large vaccination stations were established, to which the parents are required to bring their children at certain times, and the children vaccinated the previous week returned upon this day so that there was always an abundance of vesicles from which to choose in vaccinating the others. Revaccination is not compulsory, but was usually done in schools and public bodies at about the age of fourteen.

Dr. Gottheil, of New York, said that he had frequently noticed a fungating sore about two weeks after vaccination, which he had regarded as a weak ulcer.

With some sets of lymph it always appeared, and with others never.

Dr. Keller, of Hot Springs, Ark., related an incident of war times. He was in charge of a hospital on the Southern side. An epidemic of variola broke out. A supply of lymph was received, with instructions that it came from the North, and was suspected of being poisoned. Such stories were then current. He decided to use it, and, to avoid error, divided each point, vaccinating a citizen with one part and a soldier with the other. Ninetenths of the soldiers had unhealthy sores following the operation, but none of the citizens, showing that they were due to the scorbutic condition of the soldiers, and not to impure virus.

Dr. Yeamans, of Detroit, Mich., said his belief in the protective power of vaccination, after exposure had occurred, grew yearly less and less. He had had considerable experience in the matter, and thought we lose sight of the many other influences brought to bear which may modify the case under observation.

Dr. Lathrop, of Dover, N. H., believed that he had seen vaccinia take the place of small-pox.

Dr. Robinson, the President, asked why, if vacinia depended on micro-organisms, which multiply so rapidly, more than one point of inoculation was necessary?

Dr. Welch, in closing, said he had been sceptical in regard to the necessity for multiple inoculations, and believed one typical cicatrix gave as good protection as many.

Animal virus, or virus of recent humanization, gives a more durable protection. That of long humanization produces a more superficial scar, and deaths were more frequent in those showing superficial scars. He does not believe in life-long protection of vaccination. The ulcers

mentioned by Dr. Gottheil he thought were only found after animal lymph had been used. It is not true vaccination and gives no protection.

Dr. E. S. Chisholm, of Tuscaloosa, Ala., read a paper entitled

THE INFLUENCE OF WEATHER CHANGES ON THE HUMAN ORGANISM.

After carefully noting the influence exerted by temperature, humidity, and electricity, the author concludes that by far the greatest power over human organism is exerted by atmospheric pressure. In support of this theory he submits two arguments. The normal atmospheric weight on man is 14.7 pounds to the square inch at the sea level. The body is sustained by an equal power of resistance, wisely provided. If the pressure be less, the surface of the body will be distended, and the superficial circulation less restrained. This change can be brought about by exposure to great altitude, as well as by natural physical causes, when the circulation will be disturbed just the same. Any undue pressure on a portion of the body may then be felt. May not this disturbance of tension on soft tissues which are fixed to the bony framework of man, or where disease has a seat in periosteal and ligamentous attachments, be liable to greater inflammation? Or when a nerve of a tooth, which in a state of health is enclosed in a bony chamber (which has no expansive liberties, nor needs them as long as health continues), becomes exposed through a small aperture; when the normal atmospheric balance is lowered, the nerve has a tendency to be drawn through the aperture and takes on inflammation, probably followed by congestion and complete devitalization.

A report from the Pennsylvania Hospital, some years ago, on the observation of barometric pressure in surgical

operations, shows that in 259 operations the barometer was ascending in 102, descending in 123, and standing in 34. Fifty-four of the whole number were fatal, 11 having been operated on with barometer ascending, 25 when descending, and 8 when standing.

In the section in public and international hygiene, the president read a paper from Dr. B. W. Richardson, of London, England, on

THE GROWTH OF PREVENTIVE MEDICINE
IN GREAT BRITAIN.

Dr. Domingos Freire, of Rio de Janeiro, Brazil, read a paper, which was translated by the French Secretary, Dr. R. Le Mounier, of New Orleans, La., on

VACCINATION IN YELLOW FEVER,
the tenor of which was that the disease can be prevented by inoculation with attenuated virus. The paper was accompanied by microscopic specimens of the microbe of yellow fever.

Dr. Freire being asked what was his theory concerning the attenuation of the virus of yellow fever, answered, by oxidation through the red corpuscles of the blood, and the proper or improper medium into which it is placed; but, he added, all this is *as yet* only conjecture.

Dr. Bailhache, Marine Hospital Service, asked if vaccination in one family arrested the progress of the fever in that family?

Dr. Freire answered in the affirmative, stating that in families of ten and fifteen members, living in *one hut*, if vaccination was practiced after the outbreak of the fever among the members not yet affected, that this arrested the further progress of the scourge; whereas, where it was not practiced they all were stricken down with the fever and many, if not all, died.

A translation of a paper by Tomassi Crudeli, of Rome, Italy, on

FACTS AND THEORIES RELATING TO THE
CAUSE, NATURE, AND PREVENTION
OF MALARIAL FEVER,

was read and the bacillus described.

Dr. George T. Maxwell, of Ocala, Fla., then read a paper on

THE INFLUENCE OF CLIMATE ON THE PRO-
DUCTION OF CHOLERA INFANTUM,

in which he took the position that heat was an essential factor in its causation. The general scope of the paper was that the cause of this disease is not yet well understood.

THE HISTORY AND PRACTICAL APPLICATION
OF STEAM AS A DISINFECTANT,

was the title of a paper read by Dr. A. N. Bell, of New York, which was followed by papers on the "The Sanitary Inspection of Railroad and Passenger Cars," by Dr. Harvey Reid, of Mansfield, O.; "Public Hygiene," by Dr. W. C. Cock, of Nashville, Tenn.; "The Clinical History of Continued Malarial Fever," by Dr. B. D. Taylor, U. S. A.; "A New Method of Detecting Trichina Spiralis in Meat," by James A. Close, M. B. (Toronto), F.R.M.S. (London), L.R.C.S.E.

In the section in climatology, the following papers read: "The Demographic Effects of Introduced Diseases, and especially Leprosy, upon the Hawaiian Races," by Dr. George W. Woods, Surgeon, United States Navy; "The Native Treatment of Disease in Syria," by Professor Thomas W. Kay, Syrian Protestant College, Beirut, Syria; "Demographic Consideration of the Evils of Artificial Methods of Preventing Fecundation and of Abortion in Modern Times," by Dr. Thomas M. Dolan, of Halifax, England.

The following is a summary of the paper by Dr. Woods:

Physically and mentally the Hawaiians were considered superior to all other Polynesian races. They are described as

tall, broad-chested, sinewy rather than muscular, with lively expressive faces, noses slightly flat and often aquiline, mouth and lips large, splendid teeth, and with bodies tattooed. They were intelligent, energetic, kind, simple and hospitable.

Civilization, represented principally by the Anglo-Saxon race, endeavored to change or modify the ancient conditions and ways, to impress upon this peculiar people their laws, religion, manners, customs, languages, government, opinions, and vices. Climate, soil, and general environment remained the same. Hence the altered conditions in their habits and implanted germs of disease must be looked to for an explanation of the astonishing demographic changes which a century has wrought in the Hawaiian race.

The first effect of the contact with civilization was the inoculation of the race with syphilis, which spread so rapidly that it is now often declared that the great majority of the adult population is contaminated. Then came epidemics of scarlatina, rubeola, pertussis, influenza, and variola, slaughtering thousands; and the native population, which a century ago had been estimated at four hundred thousand, was reduced to forty thousand in 1884. The extraordinary mortality has been attributed to cachectic conditions, venereal disease, poverty, bad food, licentious and vicious indulgences, including *ava*-drinking, opium-smoking, and excess in intoxicating liquors. Later, leprosy was introduced by the immigration of the Chinese. This disease was spread rapidly by the good-nature, social tastes, and hospitality; no fear of the disease, eating from the same dish, and passing the pipe or *ava*-cup from mouth to mouth; cohabiting with infected persons, and promiscuous and compulsory vaccination.

The first case of leprosy in a native was

recognized in 1848. From the establishment of the leper asylum, on the island of Molakai, in 1865 to 1885, three thousand and seventy-six lepers were received, showing in a measure the great prevalence of this scourge. For the eradication of leprosy the following measures are recommended: Segregation of the infected, cremation of the dead bodies and, so far as possible, all discharges, morbid and *fæcal*, as well as the clothing and bedding, and proper disinfection of the walls, floors, and utensils used by the living.

Prof. Albert R. Leeds, of Stevens Institute, New Jersey, read a paper on

THE NUTRITION OF INFANTS.

He had undertaken to find a true basis for the preparation of artificial food by analyzing eighty samples of human milk. He found that human milk differs from cow's milk chiefly in the proportion and digestibility of the caseine, which is smaller in quantity and more easily digestible in human than in cow's milk. He believed that he had solved the problem by digesting the caseine by a peptogenic powder, easily obtainable and of constant strength, which, with the aid of heat, reduced the caseine in five minutes. Before this cooking, the milk had been first diluted with water in order to lessen the proportion of caseine, and then had been enriched by the addition of cream to restore the normal proportion of fat. The results of a very large number of trials, followed by careful observation, encouraged the belief that by this process the artificial feeding of infants had nearly reached perfection.

Dr. Titus Munson Coan, of New York, read a paper on

AMERICAN MINERAL WATERS, WITH REMARKS ON CLIMATE.

He discussed the subject under four topographical headings: Springs of the Atlantic, the Southern Central, the Northern

Central, and the Western or Pacific States. He called attention to the fact that much of the Eastern area of the country was of earlier formation than that of Europe; that, in fact, this part of the New World was, geologically speaking, the Old World, and not the New. This fact explained the comparative absence of thermal springs in the East, while the Western area, including but thirty-nine per cent. of the total area of the country, yet contained eighty per cent. of the known thermal springs. The range of the American mineral springs in their chemical constitution is very great, and their curative waters are as important as those of Europe. In some parts of the country, as in New Mexico and in Nevada, it is often easier to find an alkaline or a saline spring than a stream of pure water. Dr. Coane gave a rapid survey of the subject, mentioning the typical springs which are suitable for the cure of particular diseases, and at which good hotel or other accommodation can be found. He remarked upon the comparative absence of well-appointed *sanatoria*, or cures, at the American springs, and the consequent lack of systematic treatment, leading both patients and physicians to underrate the curative value of spring treatment. Climate is an adjunct element of the utmost importance in spring treatment; and the best climate in the country is that of California and Oregon. The climate of the Hawaiian Islands is probably the most equable that is known, at the comfortable range of 70° to 80° F., and those islands are destined to become a health resort for Americans.

Dr. Richard J. Nunn read a paper entitled

A CONTRIBUTION TO THE STUDY OF CLIMATIC AND OTHER PECULIARITIES OF LOCALITIES WHICH DETERMINE EXEMPTION FROM ENDEMIC PLAGUES.

The object of Dr. Nunn's paper was to determine whether the extraordinary exemptions from certain diseases in Savannah are due to any special topographical or sanitary conditions in that city.

Vesical calculus, typhoid fever, typhus fever, puerperal fever, are absent; Asiatic cholera visited the city only once (1866); diphtheria and exanthematous diseases are mild; membranous croup is exceedingly rare; cholera infantum is mild and exceedingly rare; cerebro-spinal meningitis has appeared but once in the city; sunstrokes are very unusual; erysipelas is not common; yellow fever has occurred but four times as an epidemic; dengue is infrequent.

The varying death-rate between the white and black races was referred to. Between 1856 and 1860 the black mortality never reached that of the whites, while since the war the death-rate among the negroes has reached double that of the whites. The changed social condition of the black race is supposed to be responsible for this variation. Formerly the negroes were almost entirely exempt from consumption; now they are extremely liable to this disease. The same may be said of syphilis.

The following papers were then read: "The Injurious Effects of Overcrowding in Cities," by Dr. A. Wernich, of Coeslin, Germany; "The Thermometer as a Climatological Instrument," by Major Charles Smart, Surgeon, United States Army; "Vital Statistics and Medical Geography," by Alfred Haviland, M. R. C. S.; of Lodon, England; "Western North Carolina as a Health Resort," by Dr. Henry O. Marcy, of Boston, Mass.; "Therapeutic Influence of the Climate of Southern California," by Dr. P. C. Remondino, of San Diego, Cal., and "Short Notes on the Mineral and Thermal Springs of California," by Professor

W. F. Mc Nutt, of San Francisco, Cal.
 INOCULATION FOR YELLOW FEVER—
 HYGIENE OF RAILROADS.

Dr. Hamilton reported as having been adopted by the Section in Public and International Hygiene, the following preamble and resolution:

Whereas, The whole community has been shocked by the almost daily occurrence of terrible accidents on many of the railroads, causing considerable loss of life, and by the habitual neglect of the most elementary sanitary laws;

Whereas, As this section considers itself in a degree the guardian of public health; be it

Resolved, That the attention of this Ninth International Medical Congress be respectfully called to this most important question, and that it be requested to use its influence to obtain the necessary reforms.

The following were reported from the same section on *Thursday*:

After reading by Dr. Domingo Freire, of Rio Janeiro, representative in the Congress of the Brazilian Government, of a paper entitled "Vaccination with the Attenuated Culture of the Microbe of Yellow Fever," with demonstration of the microbe under the microscope, the following preamble and resolutions were adopted by the Section:

Whereas, Inoculation against yellow fever, if it proves successful after further examination, is calculated to benefit the human race throughout the world; and,

Whereas, The facts presented by experiments of Dr. Domingo Freire afford a reasonable assurance of its protective influence in Rio Janeiro; therefore,

Resolved, That this section recommends the co-operative investigation of the results obtained by yellow fever inoculations as a protective against that disease, and that adequate appropriations by the

Governments represented in this Congress be made for that purpose.

Resolved, That this action be communicated forthwith for consideration in the general session of the Congress.

Dr. Joseph R. Smith, United States Army, read an able paper on the question of

THE BEST RATION FOR THE SOLDIER.

The author endeavored to show the difficulties in the way of ascertaining the exact amount of food that will suffice for the soldier in service, and compared the rations of different European armies, and the diets devised by various observers and experimenters. He showed that in general they err on the side of too great abundance, and briefly alluded to the proportion of carbon and nitrogen which the ration of the soldier should contain. He suggested two rations for armies, whose mean portion of carbon and nitrogen would be about five thousand grains of the former and about three hundred grains of the latter. The paper was illustrated by numerous tables, showing the composition of the rations designed by Moleschott, Playfair, Pettenkofer, and Parkes.

In the absence of the author, Dr. John Denis Macdonald, of the British Army, his paper was read by Dr. Lloyd, of the Royal Navy. It described

A NEW FORM OF STRETCHER AND
 STRETCHER-SLING,

for use in the field, which displayed great ingenuity. The stretcher-sling exhibited possesses the advantage of generally distributing the weight, and of combining the support of the shoulders, loins and hips.

The next paper in order, by Valery Havard, United States Army, was read by title.

Dr. Jeffrey A. Marston, of the British War Office, then read an instructive paper on

HUTS AND HUT HOSPITALS, as used by the British Army in Egypt and India. He described the construction of these in detail, and offered general remarks upon the subject of camp sanitation. A hut designed by Major Marsh, Royal Engineers, illustrated the plans and sketches, was especially recommended for its portability, durability, faculty of erection and removal, and low cost. These huts were constructed with projecting eaves, and a constant change of air is effected by means of ridge ventilation.

The next paper, entitled

THE CONSTRUCTION OF FIELD HOSPITALS, AS ILLUSTRATED IN THE DEPOT HOSPITAL OF THE ARMY OF THE POTOMAC AT CITY POINT, VA., IN 1864-65,

was read by Dr. James Collins, of Philadelphia.

Beginning with some general remarks on the great advantages of tents for field hospitals, he described at length the construction and general disposition of the field hospital established in 1864-65 upon the shore of the Appomattox River, one mile from City Point, Va. The hospital occupied an area of two hundred acres, and had a capacity of 10,000 men, and there was treated there the enormous number of 71,223 men. He alluded to the excellent sanitary condition of the camp, of the means adopted for sheltering the tents from the cold winds by the transplantation of small pine-trees, the various attempts made to heat the tents by ingenious devices, with more or less success, and the organization of the hospital. In conclusion, the speaker feelingly adverted to a visit of the late President Lincoln to the camp, on April 12, 1865.

Dr. W. Varian, of Titusville, Pa., agreed with the writer in recommending tents for hospital use, dwelling upon the fact that by their use the liabilities to the development of enteric fever and other

camp diseases was greatly lessened, and that wounds of all kinds, as a rule, do well under canvas. He emphasized the importance of allowing free circulation of air between the tents, and of making the streets of a width of fifty feet, at least. The various methods of heating the camps, spoken of by Dr. Smith, he had also tried and found that open fires made in front of the tents was the most satisfactory.

Dr. Jeffrey A. Marston, of England, read a very able and interesting paper on AGE AND ACCLIMATIZATION OF SOLDIERS IN REFERENCE TO SERVICE.

With regard to age, the author said that a man was best fitted for service, at least in India, between the age of twenty-seven and thirty years. He alluded to the well known fact that the younger men, although capable of enduring great hardships and privations for a short period, are inferior to adults in their powers of endurance in long-continued efforts.

The influence of climate upon the soldier was discussed at length, the speaker more particularly describing the effects of Indian climate upon the newly arrived soldier. He presented tables showing the mortality among soldiers in Indian service, stating that the prevailing disease among the soldiers is enteric or typhoid fever. This disease may be said to have no geography, extending, as it does, from the Rocky Mountains to the Himalayas. It prevails among Europeans, and is also more frequently fatal during the hot and cold seasons; according to the experience of Indian surgeons, the greatest period of susceptibility lies between the ages of eighteen and thirty years. The liability of death during his first year of Indian service by this disease is greater than by all other diseases.

The British troops suffered greatly in Egypt during the campaign of 1882; in

the Suodan campaign of 1884 the troops suffered less from this cause, being daily supplied with condensed water; but in 1885, in spite of this same precaution and of great attention to sanitary details, for some reason still unaccounted for, the sickness from this disease was excessive.

During the first year of the young soldier's sojourn in India, he is likely to be attacked by a fatal form of pneumonia. But of the prevailing affections, next to enteric fever, hepatitis heads the list, this disease being very commonly met with. Cardiac disorders come next in the order of prevalence.

In the discussion which followed, Dr. Morse K. Taylor, United States Army, stated that his experience agreed with that of Dr. Marston in regard to the prevalence of heart affections among soldiers; this fact, he thought was not sufficiently recognized by our own surgeons.

Surgeon-General C. T. Langridge, of the British Army, fully endorsed the view of Dr. Marston with regard to the greater power of endurance of the adult men over the younger; these latter, he said, were constantly breaking down when marching, particularly when exposed to the heat. During the Afghan campaign the troops suffered more from enteric fever than from any other disease.

Dr. Charles Warrington Earle, of Chicago, Ill., read a paper entitled

AN INVESTIGATION TO DETERMINE
WHETHER THE ABSENCE OF SEWERAGE
AND OF WATER-POLLUTION DIMINISH
THE PREVALENCE AND SEVERITY OF
DIPHTHERIA.

He presented the results of a study of the causes of diphtheria in localities remote from sewer gas influence in the less thickly populated Western States and Territories. He had received communications from a large number of physicians widely scattered over this great region.

His conclusions are briefly summarized as follows:

1. Diphtheria occurs in the mountains and prairies of the great Northwest with the same malignancy as in the East.

2. And with equal virulence in vicinities remote from sewers.

3. When once introduced, the residents of damp sod houses suffer with marked severity.

4. The infection is transported thousands of miles in some unrecognized vehicle.

5. There is abundant testimony that it follows the lines of railroads and steamers, making it imperative to increase the watchfulness and improve the methods of disinfection by railroad and steamboat companies.

6. The desirability of legal enactments obliging people of all classes to recognize their responsibility in regard to the control of contagious diseases.

Dr. W. Foster, of Putnam, Conn., reported the apparent connection between diphtheria and exposure to filth in two cases occurring in a town of 7,000 inhabitants, otherwise entirely free from the disease. The boys affected had been playing almost constantly for several days in and about a barn, the cemented cellar of which received sink water and house refuse as well as manure. Isolation and thorough disinfection prevented the spread of the disease.

Dr. F. E. Waxham, of Chicago, Ill., believed that diphtheria is due rather to the absence of sewers than to their presence. An impure atmosphere and the presence of filth and decomposing vegetable matter are important factors. Absolute cleanliness, which, of course, includes disinfection, is our best resort.

A paper was read by Professor Victor C. Vaughan, of the University of Michigan, on

THE USE OF COWS' MILK IN THE ARTIFICIAL FEEDING OF INFANTS.

Three years ago the writer had isolated the active principle from poisonous cheese. He had named it tyrotoxin. Later he found the same principle in milk, ice-cream, and other articles of food. In experimenting with this poison it was found that its action on the lower animals produced the phenomena of cholera infantum. The symptoms and the post-mortem appearances were identical. From this it is easy to understand the prevalence of cholera infantum among the very poor, where fresh, wholesome milk is almost unknown.

Not a few medical teachers advise the prohibition of the milk during the progress of cholera infantum, basing their opinions on clinical experience. The same view had been reached by the author of the paper through a long series of laboratory experiments, which show that normal milk inoculated with a small portion of poisoned milk and kept a few hours at the temperature of the body becomes itself poisonous.

Dr. Lewis P. Bush, of Wilmington, Del., advocated the use of a young and healthy cow, isolated from others, as in a herd there was a possibility of the contraction of some disease which might injure the milk.

Dr. R. B. White, of Ennis, presented the following rules which his experience had suggested.

1. Test with litmus, and add lime water, if required, before every meal.
2. Limit the amount given in twenty-four hours.
3. Allow only bottles large enough for a single meal, four to six in number; those not in use to be washed in boiling water and kept in an alkaline solution or suspended in the sunlight.
4. The best nursing bottle is a two to

six-ounce flask with a rubber nipple drawn over its mouth.

5. Bring the milk to the boiling-point, and then keep it on ice.

Dr. A. E. Goodwin, of Rockford, Ill., was in the habit of insisting on the milk of one healthy cow well fed and stabled; on boiling the milk and keeping it in a sealed glass vessel at a temperature not higher than 60° F., and diluting it with from one-third to one-half of water with, perhaps, the addition of a little malt.

Dr. W. D. Booker, of Johns Hopkins University, stated that there can be little doubt of the injurious effects of micro-organisms upon milk, and the best way to prevent this is not to trust to keeping the milk cool, but to first boil the milk in a flask supplied with a sterilized cotton stopper or a suitable sterilizer. It can thus be set aside and kept for a considerable time in a pure condition.

He believed it was important, in considering the injurious effects of decomposing milk upon children, not to overlook the danger of other injurious articles of food, which we know to be indigestible by children, and which are probably more often the first cause indigestion.

Dr. J. Lewis Smith, of New York, asked the writer of the paper in regard to the post-mortem appearances in the animals who had died from the effects of tyrotoxin, and especially in regard to the mucous membrane, which, in patients dying from cholera infantum, is pallid after an illness of twelve or twenty-four hours, and injected if the disease had lasted three or four days.

Dr. Vaughan replied that the mucous membrane of the stomach and intestines had been, as a rule, pale, and even almost white. In cases where the animal had survived a longer time, the membrane had been congested, but never in a very marked degree. The president added

that, contrary to the opinion of some good observers, he entertained the conviction that the disease is inflammatory in its nature.

Dr. Mariano Semmola, of Naples, Italy, delivered a general address on

BACTERIOLOGY AND ITS THERAPEUTIC
RELATIONS.

The object of medicine is to cure disease. To cure disease we must know the causes that produce them. The external causes are visible and tangible, but to discover the internal, invisible causes is the aim of medical science. To solve this problem we must employ the true method of solving all problems—the experimental method. Doctors lost themselves in fantastic speculations before this method was known. The wonderful progress of physiology has been made in the light of experimental methods. When morbid conditions had been studied, instead of going on with the same careful and slow research, physicians wanted to hurry on, because they wished simply to cure the sick. To apply the experimental method and, at the same time, go fast is, in the nature of things, impossible. Thus it happened while physicians were making experiments in the laboratory, instead of having patience to master their studies, they came at once to a conclusion. New hypotheses had to be made, and without knowing it they began again the same errors that had characterized the medicine of the earlier day. New systems thus came into the field, that were the opposite of the experimental method. If medicine is to progress and be a science, it must not leave the experimental method, otherwise there will be nothing but renovations of error and loss of time.

The error of the day is bacteriology considered as the key to all pathology. Bacteriology should be studied, because it teaches what is in the microscopical

world, of which we had never dreamed the existence—a world in which man lives, and which is filled with enemies of mankind.

We drink millions of microbes in water, and respire millions in the air. Sometimes these microbes affect us—perhaps killing in a few hours.

When we strive to cure the sick, we must proceed cautiously, because, before there has been a careful demonstration, if we attempt to deduce a remedy, there is danger of doing harm to the sick instead of curing them. This is the great harm modern bacteriology does. Doctors concluded at once that microbes were the cause of disease, whereas, in many cases, microbes are but effects of disease. We ought to reproduce the disease artificially by a microbe before concluding that it is the cause. The experiments made have not given any satisfactory results, except in carbuncle and tuberculosis. To conclude hastily that this or that microbe is the cause of any disease, is but to ignore or set aside the experimental method. The demonstration which the experimental method demands in this case would be complicated, because we would not only have to know that the microbe existed, but we would have to know what was the condition of the blood necessary to the culture of that particular microbe, and science tells us that, for the present, this is a problem we cannot solve.

We know very little of the normal condition of the blood, and biological chemistry is still in its infancy. Man cannot separate himself from these millions of parasites among whom he lives. That bacteriology may be a guide in the cure of disease, we must not only learn all we can of the microbe itself, but, more important than all, must ascertain all that is possible of the condition of the field of culture. The science of the

present knows nothing of the conditions of these fields of culture in living organisms. It is thus evident that in the present condition of bacteriology it cannot be taken as a guide for the treatment of internal diseases. The older school of medicines spoke of organic dispositions, or tendency of such and such a disease. This expression had no meaning, but it expressed the fact. When bacteriology speaks of a need for a special field of culture it says the same thing, because we do not know of what the field of culture consists. Therefore, this cannot be called a science, because a science is never composed of unknown things; it goes from the known to the unknown. If a man supposes a fact instead of demonstrating it, the phenomena of nature are not reproduced. When he resorts to hypotheses the power of man disappears. If nature's laws are not respected, the telephone does not work, the electric light does not flash, the steam-engine stops. The doctor, then, is the only one who pretends to become the master of nature without knowing her laws. Referring again to the failure of medicine to follow up a discovery in the scientific way with thorough research and demonstration, and its tendency to accept conclusions quickly, Professor Semmola said that modern bacteriology may lead the way to the most fruitful field of inquiry in the future, but for the present it has produced no practical results in the cure of internal diseases. It has not, he claimed, been demonstrated in what measure microbes are the causes of diseases. He therefore hoped that the younger generation would continue experimental researches with the thoroughness of method which the great masters have transmitted to us. They must renounce their preconceived ideas in medicine, and interrogate nature without

torturing her. Scientific independence must be preserved. They must not proceed without measuring their steps. He trusted that his desire for scientific independence in such researches would be echoed in this land of independence.

A unanimous vote of thanks was extended to Dr. Semmola for his address.

Dr. A. Tucker Wise, of Engadine, Switzerland, presented a paper on

THE CLIMATE OF THE SWISS ALPS, WITH
PULMONARY CASES TREATED AT AN
ALTITUDE OF SIX THOUSAND FEET.

The marked peculiarities of Alpine winter climate may be enumerated as dryness of the air and freedom from micro-organisms, mechanical irritants, and noxious gases, low temperature, plenty of sunlight, low pressure, and ozoniferous atmosphere. The results of these peculiarities upon pulmonary complaints may be stated thus:

1. By breathing aseptic air free from dust, irritation, or, perhaps, recurrence of infection by microbes in the respiratory tract is greatly lessened.
2. Vaporization of morbid secretions in the lungs takes place, promoted by reduced barometric pressure and dryness.
3. Increased oxidation of blood and tissue from sunlight, cold air and reduced pressure.
4. Increased quantity of blood circulating in the lungs, the freedom of the circulation being aided by extended chest movements.
5. Increased activity in the pulmonary lymphatics, and a general improvement in nutrition and glandular secretion; also an exhilarating effect upon the nervous system.

The four principal health resorts of the Grisons, in Switzerland, are Maloja, Wiesen, Davos and St. Moritz. The climates of these resorts are stimulating and tonic.

Twenty-three cases are related, showing great improvement during a residence of from one to sixteen months.

A paper by Dr. John D. McDonald, Inspector-General Royal Navy, on

GROUND AIR IN ITS HYGIENIC RELATIONS, pointed out the importance of the study of the atmosphere of the soil, but contained no new points of view.

Dr. P. H. Bryce, of Toronto, Canada, Secretary of the Provincial Board of Health, read a paper upon

HOUSE ATMOSPHERES, OR ARTIFICIAL CLIMATE.

The points considered were the constituents of house atmospheres, their temperature and humidity, and air currents; the effects of house atmospheres on populations, and remedies for existing evils connected with house atmospheres.

With reference to the constituents of house atmospheres, the observations of Miquel, Koch, Aitken and Tyndall upon indoor and outdoor air were quoted. Considerable attention was given to temperature and humidity in connection with house air.

The remedies for the evils mentioned are sunlight in abundance, greater care in the construction of dwellings, foundations, and plumbing appliances, improved municipal sanitation, and the attainment of equable heating and thorough ventilation. In conclusion, it must be recognized, regarding the fatal effects of the imperfect conditions of human life under which Indians, negroes and many of the people of limited means exist, demand the earnest consideration of all workers in the field of climatology and demography; and since the occupations, urban residence, and limited means make it impossible for an increasing proportion of our population to enjoy the health-giving influences of rural residences and

the stimulating effects of life by the ever-restless ocean, or upon the mountain side, we shall best conceive the duties assigned to us, of making it possible for every willing citizen to so live under his own roof as to maintain a vigor unimpaired for the discharge of the work lying nearest him, and to transmit to the race that is to be a legacy of physical health.

The opening address of the President of the Section in Medical Climatology and Demography (Albert L. Gihon, M.D., U. S. Navy) was entitled

ON THE DOMAIN OF CLIMATOLOGY AND DEMOGRAPHY AS DEPENDENCIES OF MEDICINE.

A place was claimed for climatology as one of the sisterhood of medical sciences. The science must be taught in a manner befitting the importance of the subject. Preventive medicine, to which climatology and demography are contributory sciences, is more important than curative medicine. The views of the late Professors Austin Flint and Samuel D. Gross were quoted in support of this assertion.

The climatological study of the future must be based upon more rational methods of investigation. The mere recording of meteorological factors is not sufficient. Determinate climatic characters are not easy to formulate. Malaria is not a climatic disease, because the cause of malaria is a removable one and within the control of man, as proved by the experience in the marshes of Savannah, the lowlands of Holland, the Maremma of Tuscany, and the Roman Campagna, whose poisonous exhalations have been converted into innocuous vapors. The drainage of the Roman marshes has reduced the death rate of the Italian army to one-third of its former magnitude. There are few specific climatic diseases. Local conditions of

insanitation are more responsible for the production of diseases than the general influences of climate. By appropriate regulation of habits, clothing and diet, the morbid effects of climate may be modified or averted, or its sanitary or therapeutic influence heightened.

The data for future generalizations must be furnished by accurate and laborious collective investigation. Vital statistics must in future be something more than mere records of so many deaths, births or marriages. Morbidity records must form the principal data for the vital statistics of the future. To have these records accurate, voluntary effort cannot be depended upon; they must be made under governmental authority. A rational nomenclature is a necessity, if our vital statistics shall serve as the basis of trustworthy generalizations.

Dr. George H. Rohé, of Baltimore, read a paper upon the

METEOROLOGICAL ELEMENTS OF CLIMATE
AND THEIR EFFECTS UPON THE HUMAN
ORGANISM.

The writer stated that medical climatology presented a much more complex problem than physical climatology. While the recorded observations of meteorological phenomena must form the basis, other conditions, such as those of the soil, must be taken into account. In studying the most characteristic climatic diseases, such as cholera, yellow fever, and epidemic dysentery, an intermediate factor—namely, the special virus of the disease—must be considered. A hot climate alone will not produce the diseases mentioned.

Sanatory or morbid effects are, however, produced by varying meteorological conditions. The effects of greatly diminished pressure upon the human organism are well known. Paul Bert and others have shown that these effects are

not merely due to the physical condition of diminished pressure, but that the relative diminution of oxygen in rarified air is an important factor in their production. While cases of phthisis usually do well in a moderately rarified atmosphere, the effects of diminished pressure are not always beneficial, as has been pointed out by Dr. Loomis, who warns against the danger of sending patients with heart disease to high altitudes. It is not probable that diurnal or accidental variations of pressure have any appreciable influence upon health. Investigations conducted by the writer have failed to yield any positive results.

The primary classification of climates into tropical, temperate and polar indicates the influence ascribed to temperature as a climatic factor. Although recent writers have attributed a determinate climatic influence to humidity, it is probable that this is of far less importance than some have supposed. The temperature must still be regarded as our best index of climate, but too much dependence must not be placed upon it. Many of the unfavorable effects attributed to moisture in the atmosphere ought to be ascribed to coincident insanitary conditions. The sanitary or morbid effects of air-currents have not been sufficiently considered as a climatological factor heretofore.

The tendency among climatologists at present is to deny to ozone any sanitary or disease-producing influence. Hydrogen peroxide is believed to be an antiseptic agent of importance in the atmosphere by some clinicians, who also ascribe therapeutic effects to the aromatic exhalations of certain plants. Very little of a definite character is known of the effects of these conditions. Further investigation is needed. The climatology of the future must be studied upon a broader basis, and ethnological, geographical and

epidemiological data must be taken into account before drawing conclusions.

Dr. W. T. Parker, of Newport, R. I., read a paper on

THE IMPORTANCE OF THE STUDY OF CLIMATOLOGY IN CONNECTION WITH THE SCIENCE OF MEDICINE.

He animadverted upon the prevailing want of knowledge upon climatology among physicians. The science should be more widely studied. A number of health resorts were mentioned as combining the requisite climatic with the appropriate sanitary conditions to qualify them as resorts for the sick. A wagon trip across the plains was recommended as one of the best means to obtain the advantages of a climatic health resort.

The President of the Section in Military and Naval Surgery and Medicine (Henry Hollingsworth Smith, M.D., LL.D., of Philadelphia, Pa.) in his inaugural address referred to the greatness of our country, the climatic differences met with over its immense territory, its great extremes of temperature, its geographical characteristics, the large yearly immigration, and the peculiarities, social and physical, which would largely result from these conditions. He drew a graphic picture of the desolation of the alkaline plains of the West, with their inhospitable soil, in comparison with the more favored sections of our country, the fertility of the prairies, and their bountiful flora and fauna.

Referring to the social characteristics of the race, these were largely due, he said, to the struggles and hardships of the early settlers, who had a hard time of it in defending the soil reclaimed by great hardships and privations from its aboriginal inhabitants, who were constantly on the war-path against them. The speaker also adverted to the great opportunities that even a man born in humblest of

conditions has of attaining the highest round of the social ladder by energy and perseverance, and gave as examples the lives of some of our presidents. The soldier, he said, also had greater opportunities than in other countries in rising from a simple private to the highest rank, as was so well exemplified by scores of instances during the late war. The wonderful resources of the country in time of emergencies were alluded to, and comparison was drawn between the small regular army of the United States in 1861 to the enormous number of men enlisted up to 1865.

A large majority of these, he said, had returned to peaceful pursuits. The speaker adverted to the remarkable growth of the medical corps of the army, and of the enormous sum of over \$47,000,000 having been expended for medical supplies during the late war. He feelingly alluded to the inestimable services of the late Dr. Frank H. Hamilton, of New York, whose recent death was mourned by the nation.

The services rendered by the American surgeons in the Crimean, Franco Prussian, and other European wars were alluded to. The great value of the medical and surgical history of the War of the Rebellion is admitted, he said, by all Europeans. The speaker then alluded to the great improvements made in the disposition of field hospitals, and to the desirability, which was being recognized, of treating the wounded under canvass, as their chances for recovery and freedom from complications were far greater under these conditions. The importance of selecting the proper site for such hospitals, sheltered from cold winds and naturally drained, was also touched upon.

At the conclusion of the president's address, it was moved that the president be tendered a vote of thanks for his able

and interesting address; which was carried unanimously.

A paper was read by title, by Surgeon-Major Francis Patrick Staples, M.K.Q. C.P., Ireland, of the medical staff of Aldershot, England, entitled

A SHORT SCHEME FOR WATER ANALYSIS IN THE FIELD, IN CONNECTION WITH WHICH WILL BE SHOWN A SMALL PORTABLE CASE FOR REAGENTS AND APPARATUS.

Dr. Staples was absent, on account of a death in his family. A few extracts, however, were read in explanation by Dr. Marston, of England.

The next paper was entitled

ON THE NECESSITY FOR A MORE CAREFUL EXAMINATION OF THE WATER SUPPLY OF MILITARY POSTS, WHERE AN UNUSUAL AMOUNT OF SICKNESS PREVAILS, AND EXAMINATION OF HYGIENIC SURROUNDINGS,

by Morse K. Taylor, M.D., Major and Surgeon United States Army, of San Antonio, Texas.

The author briefly reviewed the history of army sanitation in this country, and spoke of the alarming death-rate at some of the military posts, due mainly to enteric and malarial fevers; an improvement at these military posts could only be had by giving proper attention to the water supply and general sanitation of such military posts. The author showed that very little attention had been given to these subjects, and that there had resulted a vast amount of sickness in the army. This sickness is remediable, as typhoid and malarial fevers are preventable; for it is shown that where they exist in excess, it is because of inattention or neglect to seek their cause and apply the proper remedies. Wherever efforts have been made to supply those military posts and camps with an abundant supply of pure water, there has resulted great improvement in the health of the soldiers

and a consequent reduction in the mortality. Many cases were related, reinforced with copious figures, in proof of the author's assertions.

In the brief discussion which followed, Dr. William H. Lloyd, Inspector-General of the British Navy, spoke of the very great importance of an abundant supply of pure water at military posts. He had noticed a certain relation between the rain-fall of a region and the prevalence therein of malarial fevers, and that an increase in the development of these fevers was generally the immediate result of a great fall of rain in the region where these diseases prevail; the speaker was unable to explain the mysterious influence which is here at work. He also, in closing, alluded to the fact that analyses of water for the use of the British Navy are regularly made, and that an improvement in the general health has been directly traceable to the pure water in use therein.

Dr. Joseph R. Smith, U. S. Army, thought it was not an easy thing to decide as to the innocuity and harmfulness of a given water, for it was a well-known fact that many waters, even when containing a large amount of organic substances, could at times be used with impunity, while at others its use was attended with baneful results. It was impracticable, he said, to make use of the microscope in the field; the eyes, nose and tongue of a soldier were his best guides, he thought, in the selection of water for drinking purposes, but there were times, while in the field, when the soldier could not exercise his judgment in such selection, and must drink any water that can be found, irrespective of its color, smell or taste, and his drinking such water was not to be prevented. As to the water supply of military posts, he thought the surgeon was powerless in preventing the pollution

of the water, particularly at posts situated within populous districts; but that, in such cases, in public sentiment and appropriate legislation of the several States lay the only remedy.

Dr. Marston, of England, briefly reviewed certain epidemics which he had observed among soldiers, which were undoubtedly caused by the use of impure water; the latter was not the only cause assignable, however, in the development of malarial fevers; that the influence of freshly disturbed soil was apt to be overlooked. In certain malarial districts of China this influence was so commonly recognized that it is a popular belief, and one which would seem to be warranted by observation, that even so slight a disturbance of the soil as the scratching of the soil by domestic fowls in quest of food is sometimes followed by the occurrence of cases of malarial fever in the neighborhood.

In conclusion, the doctor called attention to the undoubted influence of water containing the salts of lime in solution in the causation of goitre, and gave an illustration of an epidemic observed by him, where the disease was directly traceable to the use of such waters.

CHOLERA IN NEW YORK HARBOR.

Quarantine, S. I., Oct. 5, 1887.

HEALTH OFFICER'S DEPARTMENT, State of New York:

Sir:—My writing you has been delayed unavoidably by the pressure of duties. Briefly I will give you the conditions past and present:

The steamship *Alesia* from Marseilles, August 29th, and *Naples*, September 3d, with most of her cargo taken at Marseilles; at *Naples* she received her cargo by lighters; arrived at this Quarantine and was inspected the morning of September

23d. The report of the surgeon showed that there had been eight deaths on board, six of which were unquestionably cholera. All the cases reported were fatal. Four cases were found in hospital sick with the disease and four cases were discovered when inspecting the passengers. I may here refer to the fact that the Bill of Health from the Consul at *Naples* declared that "there had been many cases of cholera at *Naples* and vicinity for the last five weeks; the exact number could not be ascertained. The mortality of those attacked is seventy."

The number of deaths on board on arrival was eight; twenty cases have developed among the passengers since they have been under observation to this date; five of those removed from the vessel have died and three recovered. Of those that have developed while in Quarantine, nine have died, four have recovered, five are convalescent, and the remaining two are now seriously ill.

The disease has been very virulent and rapid in its fatality in a majority of these cases; in several instances patients that were well at inspection in the afternoon were nearly or quite pulseless within twelve hours.

At this date there has been no development of cases among the immigrants for two days past. The steamer was twice washed with scalding water from the boilers through the hose in every accessible part, and immediately after this, washed in every part with a solution of corrosive sublimate, two parts to one thousand. The hatches had been closed and sealed, and covered with tarpaulin before the passengers were taken on board, except three cabin passengers taken at Marseilles. All the immigrants were removed to Hoffman Island.

Immediately subsequent to the washings with the solution of mercuric chloride,

after breaking out the cargo to the bottom of the hold one hundred pounds of sulphur were burned in the hold, the hatches of the spar deck being closed for ten or twelve hours.

The disinfection by the solution before mentioned was the next day repeated, every accessible portion of the vessel being washed with it by brooms or sponges, followed by the combustion of one hundred and fifty pounds of sulphur, the hatches being again closed until the following morning.

Every textile fabric, carpets, mats, the dunnage and clothing of the crew were immersed in boiling water for a considerable time by the introduction of steam through hose attached to the boilers. Finally, all exposed portions of the steamer, except the saloons, including the fore-castle were repainted. The steamer was detained in the lower bay fourteen days.

The well passengers were removed to Hoffman Island for observation, and the sick to Swinburne Island Hospital the day of their arrival at Quarantine. The cleansing and disinfection of the baggage of the immigrants commenced immediately thereafter. A large tank that can be securely closed, having a perforated pipe and extending from the bottom to the under side of the lid, and connecting with a large boiler used for heating the buildings is used in part for the disinfection. Two rooms, 15x20 each, made as close as possible, are used to disinfect by the combustion of sulphur. Each piece of baggage and every article of clothing have been subjected to sulphurous acid gas thus produced for several hours in the ratio of three pounds to each one thousand cubic feet of air space. The disinfection by moist steam heat has been at the same time constantly in progress. The clothing is subjected to

this process for at least three hours. Barrels of a solution of bichloride of mercury of the strength before mentioned, are placed in the closets and used to wash them after the dejecta of each person has been removed by the flush from the tanks above the hopper of the closet.

Every day the floors of the large buildings, each 50 by about 150 feet, are washed with the solution of the same article. To-day the subjection of each and every article of baggage has been again commenced, and will be continued until all articles have been again disinfected by the means mentioned.

For two days past no new cases have developed. It is well to state that the first cases on the Alesia developed the ninth day after the steamer left Naples. It is as yet an open question whether the cases that have developed on Hoffman Island arose from infection contracted from the same source that give rise to the deaths on board the steamer, or from sources that were transferred to Hoffman Island with the passengers.

There is every reason to believe at this writing that the infection among the immigrants is destroyed except possibly that its development may be exceptionally long delayed in cases which may occur.

Very Respectfully,

WM. M. SMITH,

Health Officer.

J. F. EDWARDS, A.M., M.D.

CEREALINE.

(The following correspondence is of interest and explains itself.)

PLYMOUTH, PA., Aug. 24, 1887.

DR. J. F. EDWARDS,

Dear Sir:—Myself and family were poisoned on Sunday morning, July 31st, by a food called cerealine; at least we think such is the case. I am selling it in the store, and would like to know if my

supposition is right. I send you by mail the package we used from, also a statement from the physician that attended us.

Yours respectfully,

ED. F. SIMONS.

PLYMOUTH, LUZERNE CO., PA.,

Aug. 23, 1887.

DR. JOSEPH F. EDWARDS, of State Board of Health, Philadelphia, Pa.,

Dear Doctor:—With this communication you will receive from Mr. E. F. Simons, a merchant of this place, a part package of a preparation of corn known as "Cerealine Flakes," manufactured by the Cerealine Manufacturing Co., of Columbus, Ind., and prepared as they claim from pure white maize without the use of any chemicals whatever. This is sent that your board may have it analysed for reasons set forth below.

On the morning of July 31st, I was called to the Simons' residence to find Mr. Simons, a grown-up daughter, a young lady visitor, and an eight-year old son suffering from gastro-intestinal irritation. It soon became evident that some injurious substance had formed part of the morning meal. Mr. Simons, whose symptoms were the most severe, had violent and continued nausea and vomiting, profuse, watery diarrhoea, of pale peach-jelly colored stools, some gastro-abdominal pain, tenesmus vesicæ with inability to urinate, cool sweat and some prostration. The symptoms of the ladies, which were much less severe, consisted merely of nausea and vomiting, some vertigo, slight gastric pain and diarrhoea. The boy suffered slight nausea and vomiting.

From an hour to an hour and a half elapsed between the meal and the first appearance of the symptoms, and their urgency subsided about two hours after their onset, without leaving any results other than general weakness and anorexia.

Upon inquiry as to the cause, it was ascertained that breakfast consisted chiefly of boiled cerealine flakes and milk. At first it was thought that, like the case of those persons at Long Branch about a year since, the milk was at fault. That there had been in the milk the development of some noxious ferment as tyrotoxicon; or, that some poisonous substance, fungi, or whatever had been eaten by the cow, thereby poisoning the milk. This, however, was eliminated when it was learned that an older son had taken quite a quantity of the same milk at that meal and escaped sickness entirely.

The milk was also from their own cow, properly cared for by themselves and fresh. The milk excluded, there was only the boiled cerealine flakes to cause the trouble.

In support of this it was noted that the severity of the symptoms was in proportion to the amount of cerealine partaken of, and that those who avoided the cerealine entirely escaped sickness. This food on this occasion was prepared from a newly opened package by the mother of the family in a good agate-ware vessel and placed upon the table and served by her, thus affording no opportunity for contamination by some designing person.

As this food substance is used to a considerable extent, it is necessary to public health that an analysis should be made and its injurious element shown.

It is known that this food has been partaken of in considerable quantities without injury, which would suggest that only an occasional package was deleterious. What should have caused the trouble in this case, it is hoped the examination of the remainder of this faulty package will show.

If you consider this of sufficient interest and importance to the profession, I should be pleased to have you publish

it, with the results of your investigation, in the ANNALS OF HYGIENE, which I receive.

Should anything further be desired your intimation thereof will receive prompt attention.

I am very truly yours,

J. H. SANDEL, M. D.

Plymouth, Pa.

PLYMOUTH, PA., August 30th, 1887.
J. F. EDWARDS, M. D.:

Dear Doctor :—Yours of August 27th to hand, and am pleased to know that you are ready to aid us in clearing up the mystery with which we are surrounded. I called on the Simons family this afternoon, and learned simply nothing new. Beside the milk and cerealine flakes of that breakfast, Mr. Simons took a little coffee, and *perhaps* a little spice cake; the latter he was not surely certain of. Miss Simons took no coffee, but instead took milk, with bread, butter, and a little spice-cake. Miss Barlow's breakfast was as Miss Simons', except that she used coffee as a drink. The boy's symptoms were of so little importance as not to call for further inquiry.

The spice-cake was a simply light, plain cake, flavored with nutmeg, cloves and cinnamon. This same cake formed part of the evening meal of the day before, and was partaken of at a subsequent meal. The cerealine flakes were boiled with equal part of milk and water. There was no water (except the boiled water of the coffee and that used in boiling the cerealine flakes) used as a drink at that meal by those taken sick. The water used by this family was from the borough water works, and has given no evidence of being impure. And since none of the neighbors, or the other members of that family, suffered at that time, it would seem excluded. Mr. Simons' name should

be "Ed. F." Please make that correction if his name is published. I am

Truly yours,

J. H. SANDEL, M. D.

These three letters, with the package of cerealine, were at once sent to Dr. Henry Leffman, Inspector of the Department of Hygiene and Food Inspection of the Pennsylvania State Board of Agriculture, who reports as follows:

PHILADELPHIA, Sept. 28th, 1887.

J. F. EDWARDS, M. D.:

Dear Sir :—From an examination of the sample of cerealine, I am unable to find anything in it which could account for the symptoms in the cases occurring at Plymouth. The sample is in good condition, clean and not soiled. It is evidently prepared from maize, as claimed by the manufacturers.

Yours, H. LEFFMANN.

It will thus be seen that a careful examination has resulted in freeing cerealine from an unjust and unfounded suspicion that had fallen upon it. There must have been some other conditions present,—something in some of the other articles eaten,—to account for the sudden seizures in Mr. Simons' family. His cow may have eaten something that caused a temporary unhealthy condition of the milk. It will be noted that spice cake was eaten, and in view of the recent developments in reference to the use of chrome yellow by bakers, it might seem not impossible that this cake was the real culprit, and it is unfortunate that some of this cake was not sent to us for examination.

However this may be, the main point at issue has been established, viz.: that there is nothing injurious about cerealine. Our attention being thus called to cerealine, we bought some to try in our own family, and we feel that we will be doing

our readers a service by calling their attention to this admirable article of diet. Made from corn, it is in the first place a pure, white, flaky article, extremely pleasing to the eye; and as a product of corn, it is a heat-producing article, and is therefore of particular use during the colder weather. As a substitute for, or an alternative with, oat meal, wheaten grits, and the like, it is a most admirable article; indeed, we may say that it is preferable, because it is much more pleasant to the taste. We, therefore, feel it a pleasant duty to highly recommend cerealine to our readers, claiming for it especially the following four advantages:

1. It is extremely nourishing.
2. It is heat-producing.
3. It is very palatable.
4. It is cheap.

CONTAGIOUS DISEASES AC- QUIRED IN SHAVING.

A case which was recently decided in a County Court in England, may serve as a caution to barbers and hair-dressers, who are in danger of forgetting their responsibilities in respect to contagious disease, while it should instruct the public as to some obscure but unavoidable risks to which they are liable. A man who was in the habit of being shaved every Saturday evening at the very modest cost of three-halfpence, was sensible on a certain Sunday of an unaccountable irritation in the skin of his face. He consulted a neighboring practitioner, who pronounced his trouble to be "parasitic barbers' itch." One form of *sycosis menti*, it will be remembered, is due to the presence of the parasite of the ringworm, and, like other cases in which the seats of hair-growth are affected by this troublesome pest, is very intractable. This, doubtless, was the character of the disease in question in the

case before us; and the decision of the judge, which was not arrived at without considerable hesitation, held that the barber was guilty of having infected his client by means of a dirty razor, brush, or towel. We confess (says *The Lancet*), that this judgment is, to our mind, by no means a clear one. Of direct proof of culpable neglect on the barber's part there was none. At the same time, no other possible source of contagion appears to have been suggested, and certainly the facts that the face was the part affected, and that at the cost a cleanly renewal of shaving materials for each customer was well-nigh impossible, must invest the verdict with whatever support is derivable from circumstantial evidence. If, therefore, we grant that the materials used were not clean, to which of them should blame be specially attached? It seems to us far less likely that the razor was accountable than that either the soap or towel was so, the first-mentioned being so much more easily cleansed. With a view to the prevention of such accidents in future, it seems, therefore, advisable that all barbers should follow the rule already observed by the better class of that fraternity, and in place of using soap in the block form, employ a soap-cream, a little of which can be set apart for each customer. The provision of separate towels and brushes in each case is at least equally desirable, even though it entail an extra half-penny in the charge.

GOT WHAT HE WANTED EXACTLY.

A lunch counter man was not puzzled to-day, says the *Atchison Globe*, when a customer called for a bowl of chrome yellow and tyrotoxinon. He immediately set up a bowl of bread and milk and remarked, "There you are."

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Editorial.

DR. A. H. P. LEUF.

Dr. Leuf has been elected Assistant Director of Physical Education in the University of Pennsylvania. This is a most excellent and judicious appointment; Dr. Leuf having won a well-earned reputation for his interest in, and writings upon, the vital subject of physical education.

OUR NEW MEMBER.

Governor Beaver has appointed Dr. George G. Groff, of Lewisburg, a member of the State Board of Health, to fill the vacancy caused by the death of Dr. E. W. Germer. Dr. Groff has been, and is, an earnest worker in the cause of hygiene, and no more fitting appointment could have been made. We cordially welcome Dr. Groff.

INTERNATIONAL CONGRESS OF HYGIENE.

From September 26 to October 2, there was held in Vienna, an International Congress of Hygiene, presided over by the Crown-Prince of Austria, and participated in by the most renowned sanitarians from all portions of the world. A special, and most exhaustive report of this great Congress has been prepared for us by Dr. Pins, assistant to the distinguished Professor Politzer, and it will appear in our next issue.

SANITARY CONVENTIONS IN MICHIGAN.

In noting that a Sanitary Convention will be held at Albion, Michigan, on the 6th and 7th of next December, we would take the opportunity of suggesting to, and urging upon, our several State Boards of Health the very great desirability of imitating the example which has been set by the wide-awake progressive Board of Michigan. This Board, with the aid and co-operation of the more prominent citizens, both professional and lay, are holding a series of conventions in various parts of the state, at which special attention is given to the discussion of the sanitary needs of the particular locality. The most important work for State Boards of Health at present is the enlistment, by education, of popular sentiment in favor of hygiene; and this can be in no way better accomplished than by just such conventions as are being now held in Michigan.

OUR REPORT ON CEREALINE.

Dr. J. H. Sandel, of Plymouth, Pa., has correctly grasped one of the most important and most useful purposes for which "THE ANNALS OF HYGIENE" was

founded. We desire to emphasize this point, because we are anxious that our subscribers should use the journal in just the same way that he has done. One of the missions of "THE ANNALS" is to stand as a "watch-dog" of health between the unsuspecting public and conscienceless manufacturers who would cajole them by specious advertising into using that which would prove injurious to health.

We cordially invite and urge our readers to send us any and all articles of food and clothing that they, at any time, have or imagine they have cause to think may be unhealthy. We will have such articles carefully examined by competent authority (without expense to the party sending to us), and will report the result in "THE ANNALS" just as it is. We wish again to emphasize the fact that these reports will be absolutely fair and impartial, and that the manufacturer of any particular article (in this case of cerealine) will know absolutely nothing of the pending investigation until he sees it in print.

THE ÆSTHETIC ASPECT OF HYGIENE.

There is truly an æsthetic as well as a practical side to hygiene. It is not only to the material interest of man that he should possess good health, but it is also, so to speak, to his spiritual advantage. There is a sense of refinement, of self-satisfaction, of contentment about the man or woman who lives in accordance with the doctrines of hygiene that it is really and truly æsthetic. It is not only more healthy to have well-paved and clean streets, good water and competent sewers, but it is also æsthetic to be surrounded by these conditions. Webster defines *æsthetic* as "pertaining to æsthetics," and æsthetics he defines as "the science

of the beautiful in nature and art." Oscar Wilde and his kind have accustomed us to look upon æstheticism as the worship of long-haired men who carry great sunflowers about with them.

But, understanding the true meaning of the word, let us ask what can be more beautiful in nature than the contemplation of a healthy man or woman, or what is more acceptable to the eye than the pure, sparkling water of an uncontaminated spring, or the well-paved and immaculately clean streets of such a city as Florence, in Italy (where, by the way, the cholera has failed to linger), or what more comforting to a refined intelligence than the sense that the plumbing of a well-drained house terminates in sewers properly constructed. What more beautiful than the contemplation of nature, in whose company *hygeia* dwells; what more vulgar and revolting to the more refined side of man than the spectacle of a badly paved, badly watered, badly sewered and generally insanitary city. The Goddess *Hygiea* is truly the Goddess of æstheticism, and it is at her shrine rather than at that of the ridiculous *Bunthorne* that the love-sick maidens of "Patience" should worship. And, happily, such is rapidly becoming the case. The sickly *Dude* is no longer regarded as "æsthetic," as "the highest type of the beautiful in art;" the fair maiden who makes man what she wills, has dethroned the spindle-shanked dude and has set up in his place the athlete to be admired as the truest representative of æstheticism, properly comprehended. Let us not, however, go to extremes; let us realize that since "Man is the noblest work of God," a healthy man must of necessity represent the "highest type of the beautiful in nature," and that since such a man only is truly æsthetic, that he who cultivates hygiene only truly fosters æstheticism.

CHOLERA IN NEW YORK HARBOR.

At last real, true, Simon-pure Asiatic cholera has reached our shores. The steamship "Alesia," bound from Mediterranean ports for New York, has brought it along and up to the time of going to press nearly a score of deaths have occurred from the disease down at the Quarantine Station, in New York Harbor. Dr. E. O. Shakespeare, of this city, has visited the scene of the dread disease and we have his distinguished and reliable authority for the positive assertion that the disease in question is genuine Asiatic cholera.

The disease has come to our shores in the natural order of events, just as it was to be expected that it would come. When we reflect upon the large area of Southern Europe where the disease has been more or less prevalent for the past three years, coupled with the criminally-neglectful system (or rather, want of system) of quarantine, which Dr. Shakespeare tells us is there the rule, it must have been evident to every thinking man that, sooner or later, the germs of the disease were bound to get aboard of some trans-Atlantic steamer and to be thus carried to our shores.

Such has come to pass, and the two vital questions that confront us are, 1st. Will it gain a foothold? and 2d. What shall we do if it does?

To the first question we are inclined to feel that a negative answer may be given. Fortunately for the country, in this emergency, New York possesses a competent quarantine officer. All the passengers of this ill-fated steamship have been removed therefrom. Those ill with the cholera have been placed in special hospitals, while all others are in a building of observation, from which they are removed to the hospital at the first indication of the disease.

After a detention of some fourteen days down the bay and a thorough disinfection, the steamer has been allowed to proceed to her wharf. All unnecessary intercourse with those down the harbor is absolutely interdicted. So much for the prevention of its introduction, which promises to be all sufficient. But suppose it comes amongst us, what then? The belief of to-day is that the germs of cholera can only enter the system through the media of food or drink, and that even though they may be so taken in that the juices of a healthy stomach will destroy them. The indications for the individual are therefore plain. Do not let us get frightened. Let us trust that the disease will not pass the portals of New York, but, if it does, let us remember that if we are careful to eliminate the contagium from our food and drink and see to it that our stomachs are healthy, we have nothing to fear.

Notes and Comments.

LIVING TO BE ONE HUNDRED YEARS OLD.

Richard A. Proctor thus writes in the *Cosmopolitan*: I have before me the records of no less than fifty-two centenarians, the details in regard to whom have been collected by a committee of the British Medical Association. Of the fifty-two no fewer than thirty-six (more than two thirds) are women. This may probably be attributed in large part to the comparative immunity that women enjoy from many risks to which men are exposed, but probably it is due not less to their greater temperance and to their freedom from the anxieties and heartburnings which attend men's struggles for affluence, and even for maintenance.

Medical men contend, however, that women also possess greater inherent

vitality than men, the mortality of girls being less than that of boys, even during the first year of life, when the female is neither more temperate nor less ambitious than the male, and is exposed to as many dangers.

Of the sixteen men only one was single; ten of the thirty six women were single; fifteen men and twenty six women, then, among the centenarians, were married; but, naturally enough, of these forty-one, a large number, all, in fact, but five, were widowed. Three of the fifty-two were rich, nineteen poor, the rest in comfortable circumstances; nine were fat (only one man), twenty-three lean, eighteen medium; only eight were full-blooded; the rest average or pale. Forty had good digestion, which, after a hundred years, means a good deal.

Most of the fifty-two have had good appetites, only two having appetites classed as actually bad; most of them have been through life moderate eaters; twelve, however, have eaten large quantities of food. Only one is returned as a large eater of flesh food, and only one as a great consumer of alcoholic liquors (in his case the liquor preferred has been beer). Only eight of all the number are classified as simply "irritable," but to these must be added five classed as "irritable and energetic." As to smoking, thirty-two are non smokers, seventeen smoke much (four of them being women), three moderately and two a little; only one chews; thirty-seven avoid snuff.

When we take a number of cases such as these in all classes of life, under many varied circumstances, and not characterized by any special course directed toward the attainment of mere longevity (which might possibly be gained without real advantage, all that makes life worth living being sacrificed for life's mere sake), most men not affected by specific disease,

constitutional or inherited, may hope to attain an age considerably exceeding threescore years and ten or even four-score years.

It would appear, in fact, as though five-score years were the natural or normal limit of human life, and that when men die many years before that age is attained, the fault, apart from malignant disease or accident, has lain with themselves. Underlying the old proverb, "Every man is a fool or a physician at forty," there is the important truth that it is in every man's power, if he is wise, to recognize early in life, like Cornaro, the requirements of his own constitution and the means by which all such stores of vitality as it may possess may be utilized.

An able physician said to me a short time ago: "In all my experience I have never known but one man who really died a natural death;" and he went on to explain that a man can only be said to die a natural death when he dies all at once, when the organs on which circulation, respiration and nutrition depend all fail at about the same time, whereas one man dies because circulation fails, another because the respiratory organs give out, and yet another because stomach, liver, kidneys or bowels become unequal to their work. In fine, the secret of longevity lies in the attainment of a natural life to be brought to an end by a natural death; and nearly every man, did he but give his vital powers fair chances, would find that, like—

The wonderful one-hoss shay,
He was built in such a logical way
[As to run] a hundred years in a day,
And then of a sudden [to pass away].

—♦♦♦—

THE NATURAL HISTORY OF WELL WATERS.

We take the following from the *London Lancet*, June 18th: "Another important contribution to science comes to us

from the celebrated laboratory and experimental farm at Rothamsted. Sir J. B. Lawes and Dr. Gilbert, whose labors, spread over a long period of time, have done so much for agricultural chemistry, did wisely when a few years ago they took Mr. Robert Warington into their scientific partnership. The present research stands in the name of the younger worker only, although he carries on the work and has doubtless been aided by the counsel of his distinguished *confreres*. Mr. Warington's paper occupies more than fifty pages of the current number of the journal of the Chemical Society. It will be studied by all interested in sanitation of scientific agriculture, and it contains such a mass of facts and tables that it is not possible to give any adequate idea of it in a narrow compass. Moreover, there are as yet no great generalizations to record, but chiefly a mass of statistical evidence which grows more detailed and accurate, and therefore more valuable, every year. Fair inductive reasoning is, however, applied to the facts. The first section deals with the rain water of Rothamsted, which has been systematically collected and measured since 1853, and which is evidently the basis of the whole inquiry. The average proportion in one million parts of this water is of chlorine 2.01, of sulphuric acid (SO_3) 2.52, of ammonia 0.36, and of total combined nitrogen 0.67. The last item is equal to about 4.4 lb. per acre per annum. Then comes a consideration of the drainage water. Ever since 1870 several isolated patches of prepared soil, consisting of loam and flint resting on a clay subsoil, supported on perforated iron plates and protected laterally by impervious walls, have been kept free from vegetation and manure. The beds are respectfully twenty, forty, and sixty inches thick, and the drainage water is collected, measured, and analyzed.

The thickness of the bed was found to make no important difference, and the results on the five-foot bed are taken as typical. Of 31.04 inches of rain which fell on this soil, 17.09 inches evaporated and 13.95 inches percolated below five feet. In the drainage water the chlorine was found to be the same as in the rain water, but concentrated by the evaporation; while the nitrogen, as nitrates, was on the average 10.7 per million—the process of nitrification being most active during the summer, while the principal discharge of nitrates was during autumn. The influence of vegetation is next studied. The conditions at Rothamsted are remarkably suitable for experiment. One celebrated field has grown wheat continuously since 1843, and one portion of it has never been manured. The drainage water from each is carefully collected, measured, and analyzed. Vegetation, especially during its active stage, increases enormously the surface evaporation by transpiration of water through the plant, and in our climate during summer drainage is entirely suspended by the action of a vigorous crop. Interesting details are given as to the quantity and composition of the drainage water at various seasons of the year, especially with reference to the process of nitrification and the absorption of nitrogen by growing crops. As to evaporation, the results seem to show that, in round numbers about one-half the rainfall of the year percolates through bare soil, and about one-third through unmanured soil cropped with wheat. This, of course, is only true under the conditions prevailing at Rothamsted. Armed with these valuable factors, Mr. Warington has, with laborious skill, investigated the well waters of the neighboring village of Harpenden—some of which are uncontaminated, while others are certainly contaminated. We must

refer to the original paper for the very interesting observations which the author has made upon these works and their apparently eccentric contamination. He does not profess to explain all the anomalies, but, knowing and using as a basis the composition of the uncontaminated waters of the district, he has been able to throw light upon some of them. The effect of season, variation of rainfall, and local circumstances upon the composition of the well waters is amply illustrated, and the large quantities of calcium, magnesium, and sulphuric acid in the polluted waters is both interesting and important. From the whole study we gather the general inference, by no means new to the experienced chemist, that it is very unsafe to give a definite opinion on the quality of a water without a greater knowledge of its source than can be gained by a mere analysis. The analysis is essential, but it can only be interpreted by what, in medical practice is known as the family history of the case."

HYGIENIC REMEDIES.

Dr. W. Gairdner delivered "The Address in Medicine" this year before the British Medical Association at Dublin, and the following is from the *Lancet's* report of his address:

"The fruitful and, he thought, the unquestioned progress of preventive medicine (otherwise called sanitary science) during the last thirty or forty years was not only a very striking advance in itself, but it might also be maintained, he thought, without contradiction that curative medicine had largely and quite steadily advanced along the same lines. The prevention and the cure of disease were not, indeed, identical, but the laws which guide the former were in a large measure, and necessarily, applicable to the latter.

The same noxious influences which beget typhoid fever, for example, tended in a remarkable degree to exaggerate, if not to cause, a host of minor diseases, and very notably to increase the risks of the healing of wounds and of the puerperal process. The same overcrowding which was in a great degree the cause of typhus fever was a source in hospital wards of pyæmia and erysipelas, in barracks and gaols of consumption (and this often among picked men), in certain endemic localities of contagious pneumonia, and probably of diphtheria. It was impossible, in the face of modern sanitation, to escape the conclusion that the causes and the remedies of disease alike were often to be sought more in the study of groups and even of multitudes of cases than in the ordinary text-books, or in the conventional remedies set down for the particular *nomen morbi*. In short, the treatment of diseases of every kind had been largely, even if silently, influenced by the thought that the chief disease-breeding factors must also be, in individual cases, adverse influences to be carefully studied and kept in check by those who would cure disease, and that, in chronic cases especially, a large part of the cure consisted in the removal or modification of the injurious action of the cause. The changed point of view implied in the more fruitful and practical study of causes had in many cases made it impossible to cling to the old and traditional aspect of certain diseases as entities, arising we do not know (and do not strive to know) how, and only to be met by a *farrago remedium* addressed to individual symptoms, or, at least, directed to the consideration that a morbid influence, or something unknown, had got to be battered down in the recesses of the economy by sheer expenditure of therapeutic violence, at whatever cost to the physiological functions of the sufferer.

INTER-STATE NOTIFICATION OF
INFECTIOUS DISEASES.

At the session of the National Conference of State Boards of Health, held in Washington, September 8th, 1887, the Committee on Inter-State Notification made the following report :

Resolved, 1st. That the Conference reaffirms the principles contained in the resolutions adopted by it at its last meeting in Toronto, 1886.

2d. That those communicable diseases hereinafter mentioned, prevalent in certain areas, or which tend to spread along certain lines of travel, be reported to all State and Provincial Boards within said area, or along said lines of communication.

3d. That in the instance of small-pox, cholera, yellow fever and typhus, reports be at once forwarded, either by mail or telegraph, as the urgency of the case may demand; and, further, that in the instance of diphtheria, scarlatina, typhoid fever, anthrax or glanders, weekly reports where possible be supplied, in which shall be indicated, as far as known, the places implicated and the degree of prevalence.

All of which is respectfully submitted.

PETER H. BRYCE,

HENRY B. BAKER,

J. BERRIEN LINDSLEY,

BENJ. LEE,

J. T. REEVE,

E. M. HUNT,

Committee.

The report having been read, it was voted that the vote on its adoption be taken by States. The vote being so taken, was unanimous in its favor by all the States and Provinces represented by delegates present.

The following resolution, offered by Dr. Reeve, of Wisconsin, and amended by Dr. Lee, of Pennsylvania, was adopted:

Resolved, That the Secretary of this Conference be requested to send copies of the resolution on Inter-State Notification of Contagious Diseases to the executive officers of all Boards of Health belonging to this Conference, and to request from each of such Boards not here represented a vote upon the same for record as an appendix to the minutes of this meeting.

If any State was not represented by a vote at the Conference, the secretary of such State Board is requested to inform Dr. C. A. Lindsley, New Haven, Conn., of the vote of his Board in compliance with the last resolution at his earliest convenience.

THE MOAN OF THE ATTIC.

Margaret J. Preston thus writes in *The Independent*:

Have pity upon us, O tender God!

We shrivel and faint; we pine away
Under the glare, that fierce and broad

Beats with its merciless, scorching ray
Into our throbbing brains; that dries
All power to weep from our parching eyes

And leaves us no breath wherewith to pray—

Ah, pity us, patient God!

Men pity us not; they go their ways,

Fanned by the breezes of sea and shore;
Steeping in mountain shades their days,
Making life wholesome to its core;

While we—we toil in our want and woe,
The tiles above and the bricks below,

Our children a-gasp on the grimy floor,
Instead of the grassy ways.

We think, with a craze, of the years gone by,

Or ever we trod a city street,
How childishly happy we used to be

On the edge of the clover, purple-sweet;
When the heat of the summer noons were strong,
How we sat by the brook as it slid along,

And dabbled our bare and dusty feet,

While the bees went buzzing by.

And it maddens us; for our children we moan,

No hope in their eyes: "Could we but see
A field of clover before it's mown,
Or wallow in grass beneath some tree,

And freshen our feet in the clean, wet sand,
 And gurgle the water through our hand,
 And hear the hum of a bumble-bee,
 Or sit on a mossy stone.

"'Twould seem like heaven?"—and when we tell,

For quieting of their gaunt despair,
 How their playmates who've died, have gone to dwell

Mid flowers and fruits and crystal air—
 Do you wonder then, as we hear them say,

As they often do, in a frenzied way,
 "Dear God!—if he only would take us there!"
 Do you wonder our bosoms swell?

Ah, pitying Christ! Thou wert once a child
 And felt the scorching of Egypt's sun,
 And saw how Thy mother's face so mild,
 Grew sad with ruth for her holy one—
 Be merciful!—move the hearts of men
 To care that our children breathe again
 The air Thy bounty denies to none—
 Thou who wert a human child!

The world is so wide, so green, so broad,
 And none of it theirs, close-pent beneath
 These crushing roofs. Shall the cool, fresh sod
 Be strange to their feet till kindly death
 Covers them under it? Must they sigh
 In the sweet, pure air until they die,
 Tasting it first with Heaven's first breath?
 Have pity, O, tender God!

CATCHING COLD AT SCHOOL.

A very large amount of damage is done to health by the lack of experience of boys at school in the matter of hygiene, says the *London Medical Press*. After several hours spent in the over-heated, but not over-pure atmosphere of the classroom, the lads are sent without transition into the playground, which at certain seasons of the year is glacial in temperature. Some of them play marbles or some other games not involving muscular effort, until too numbed to continue, while others indulge in violent exercise, until, out of breath and uncomfortably hot, they placidly seat themselves until sufficiently cool. The precautions which would suggest themselves to the adult provided with an average amount of

foresight naturally do not occur to boys, or if they occur are disregarded. The result is that a comparatively large proportion of the boys suffer more or less severely from maladies *a frigore*. Acute pneumonia and bronchitis, pleurisy and acute rheumatism, to say nothing of influenza and quinsy, are the reward of their ignorance or of their temerity. It behooves those who are in charge of these youngsters to make up for the incautiousness of youth by enforcing the observance of a few elementary but useful precautions. On leaving the school, none should be permitted to loaf about or to take part in games which do not involve active bodily movement. Overcoats cannot and should not be insisted upon, for the simple reason that if they were, the earliest possible opportunity would be seized of taking them off and thus doubling the chances of catching cold. Probably the simplest and least irksome plan would be to provide each boy with a jacket of the kind generally known as the "Cardigan" jacket, a close woollen garment which prevents sudden chills, and does not interfere with the liberty of motion which is such a strong passion with healthy boys. Its use ought, with equal reason, to be enforced in the football field, where the slightest negligence may be serious, from the arduous labor involved in the game and the flimsy garments which are worn thereat. These indications are not difficult to fulfil, and they might be the means of protecting our boys against the consequences of their ignorance or inexperience. We commend them to the notice of the proper authorities.

"SUSPICIOUS" DISEASE IN SPAIN AGAIN.

A foreign exchange tells us that "a number of 'suspicious cases' have recently

occurred in Madrid, which some people, remembering how, at the beginning of the last outbreak of cholera, all the cases were returned merely as "suspicious," are afraid are veritable cases of that disease; especially as it is raging in Sicily at the present time, and there is a good deal of communication between Italy and Spain. The leading medical journal remarks that cholera has never been known to break out primarily in an inland town without previously manifesting itself on the coast. The idea was started that the persons attacked must have drunk poisoned milk, and the milk, or at least some milk, was sent to the municipal laboratory, where nothing more injurious than a little carbonate of soda was detected. It was then suggested that white lead might have been put into the milk in mistake for carbonate of soda. This, however, would appear to be most unlikely, and, as carbonate of lead is insoluble, detection would have been tolerably certain. Altogether there would seem to be an entire want of positive evidence to indicate the milk as the source of infection, especially as it is stated that many of the affected persons had not been in the habit of drinking milk. This is said to have been notably the case in a deaf and dumb asylum, whose inmates, together with the servants and teachers, have been amongst the sufferers. The food sold in the town has also been examined, with the usual result that a good deal of it was found to be adulterated. Still, nothing has been discovered to prove that any large quantity of arsenic, lead, or other toxic substances capable of producing colic and intestinal disorder has been mixed with the food; so the origin of the "suspicious cases" still remains involved in obscurity, though it is to be hoped that it will not be allowed to remain in that condition, even should the malady be found to be of a zymotic character."

MARSH LANDS AND DIPHTHERIA.

In our last issue we referred to the causative relations between marsh lands and diphtheria, as noted in the report of the Wisconsin State Board of Health, and as of interest in this connection we find that Dr. J. R. Borland, of Franklin, Pa., thus writes to the *Evening News* of that place:

It may not be amiss to offer a few comments on this disease, which has assumed a malignant form in this city and its environs. Five deaths have already occurred and others may be expected.

The causes, here, are undoubtedly local and not from general atmospheric influences, in proof of which I would state, that at the Brewery, near the Cemetery, is a pond, made to accumulate ice, which, some three weeks ago, was drained. The exhalations from this, and the overflow of Monkey run, no doubt, had much to do in producing and propagating the disease in that locality.

During a heavy rain, which occurred several weeks ago, the water ways in the Third Ward, at the depot, became choked and the water accumulated in a pond, which became putrid, as everyone noticed who passed by when it was being drained. That and the overflow of the run accounts mainly for the prevalence of the disease in that neighborhood. When the pond was being drained, the writer suggested the sprinkling of lime over the drained surface, which was not done.

At one residence in the Third Ward, the privy is situated on ascending ground about three rods in rear of the house, the vault of which has been more than full for months. When a heavy rain comes the overflow runs down under the house and into the cellar. Five children and an adult had the disease there. The owner promised a new vault last spring, but has not built it yet. It would seem that, in such a case, *damages should lie against the owner.* Why not!

THE CENSUS OF FRANCE.

The French press is sounding the alarm about the results of the recent census. The *Journal Officiel* has just published the *compte rendu* of the work of May last. The population of France at that date was 38,218,000, showing an increase of only 546,000 over the figures of 1881. Thus, France has 10,000,000 less than Germany. Further, 1,000,000 of the total are foreigners who could not be counted upon in case of aggression. There is another verity which is yet less consoling, and that is the slight increase is still diminishing, when compared with former years. From 1876 to 1881 the increase was put down as 776,000. The reason for this decrease is not to be found in the physical temperament of the race, but their unwillingness to procreate. Malthusian principles are generally adopted in the towns. One child, or at the most two, are accepted, but there a strong line is drawn. Means are adopted to prevent conception, of which the least culpable consists in the husband, *battant en retraite*. If conception does take place there are women ready to cut it short for a trifle, and if the full term were arrived at by some mischance, why, it is easy to do away with the child by quenching its existence, and the jury is so indulgent towards young girls who thus dispose of the fruit of their *faiblesse* by committing a crime!

GERMAN LEGISLATION REGARDING POISONOUS COLORS.

A measure has just received the Imperial assent in Germany which prohibits the use of colors injurious to health in the preparation of articles of food or confectionery. The substances indicated are colors and color preparations containing antimony, arsenic, barium, lead, cadmium,

copper, quicksilver, uranium, zinc, tin, gamboge, coralline, or picric acid, power being given to the Imperial Chancellor to frame detailed regulations as to the tests to be employed for detecting the presence of arsenic and tin. The covering used for holding or wrapping the articles in question are subject to the above general regulations, but exceptions are made for sulphate of barium, colored baryta lacquers (free from carbonate of barium), chrome oxide, copper, tin, zinc, and their alloys (when used as metallic colors), cinnabar, oxide of tin, sulphuret of tin (when used in mosaic gilding), and colors burnt into the glass, glaze, or enamel of the receptacles alluded to, as well as those used in painting the outside of packages, etc., composed of impermeable substances. The prohibition of the first-named group of noxious ingredients extends (with exceptions generally corresponding with those already named) to cosmetic preparations, or dyes used for the skin, hair, or mouth, as well as to toys, picture books, flower-pot frames, etc. Special restrictions against the use of arsenic are made with regard to printing and lithographic work upon the objects already specified, as well as with respect to wall-paper, carpets, furniture stuffs, paints, etc.; a small maximum quantity being permitted in textile articles.

THE PRESENT AND FUTURE OF WORKING WOMEN.

The ideas and suggestions therein contained are so applicable to our own country that we reproduce the following from the *London Lancet*, August 6th: "We have felt it to be our duty to draw public attention in former issues of this journal to the hard conditions which trade custom has, with singular injustice, assigned as the lot of very many working women. It is therefore with lively satisfaction that

we notice the indications of a systematic endeavor on the part of certain representative members of the community to understand, and as far as possible to alleviate, the hardships of a class whose troubles are certainly greater than its complaints. Mr. Walter Besant, in a recently published letter, proposes the meeting of a conference towards the end of the present year to discuss the whole question of female labor, and a committee, including several well-known names, has already been appointed to carry the scheme into execution. Overwork and underpay, it has been truly said, are terms which briefly describe the purport of the market regulations under which women in the present day find employment. The inordinately long working period, the wages, far too often absurdly inadequate to the effort, which it pays; the evil of close and ill-ventilated workrooms, the absence of necessary conveniences, and the very faulty dietetic arrangements, each of them a common grievance in the world of warehouse life, will, we cordially hope, receive due consideration in the deliberations of the coming congress."

THE LATE SENATOR SUMNER'S GREAT STRENGTH.

Mr. Sumner (the *Cosmopolitan* tells us) was hardly aware of his enormous strength, it was so seldom called into exercise. His books were packed in large boxes at the end of each session and sent from his rooms to the Capitol, only to be returned at the beginning of the next session. These boxes weighed nearly five hundred pounds each, and were difficult to handle in passages and stairways, and so were accompanied by four men. Once when he was living at the Rev. Dr. Sansom's, one of these heavy boxes got stuck in the stairway. It could be extricated without

damage to the walls only by lifting it over the banister. The four men failed to apply their strength to the most advantage, for they got in each other's way, and thus failed to move the box. The Senator, hatted and gloved, ready to go out, came to the stairs.

"Why don't you lift it over the rail?" said he.

"How can we?" answered one. "You have no idea of its weight."

"Let me try, said the Senator, and leaning over the rail he seized the rope becket at the end of the box and lifted the latter clear of its entanglements by one sure pull, splitting his glove, however, across the back. The men were amazed; and he, a little embarrassed, said: "I didn't mean to lift it, only to try its weight;" and then went back for fresh gloves.

A STREET DEODORIZER.

From the *New York Sun* we learn that "A Health Department wagon, carrying a barrel filled with a solution of bromine, was driven along the excavations, and the chemical was sprinkled upon the up-turned earth from large sprinkling cans. Mr. Bayles, President of the Board of Health, was present at nine o'clock yesterday morning, when the operation was in progress, and expressed himself as much pleased with the result. The odor of the mixture is rather pleasant, and it at once neutralized the bad smell from the dirt. At Twenty-seventh street and Broadway, where some particularly foul earth lay exposed, a double dose of the disinfectant was applied, with the result that the offensiveness was wholly removed. The smell from the dirt is simply that of the gas which has escaped from the pipes, and which the pavement held imprisoned in the ground. Although several people complained of headache from inhaling it

all day, it is not considered as very unhealthy. Several applications of the chemical were made during the day, and everybody was gratified at the marked change for the better."

THE WHOLESOMENESS OF SWILL-MILK.

Dr. George H. Rohé writes as follows in *Science* of July 22d :

The discussion carried on in the pages of *Science* for some weeks past upon the healthfulness of milk from cows fed upon distillery-swill has, in my opinion, failed to definitely settle the question. There can be no doubt of the vital importance of the matter, and all physicians and sanitarians will agree that a solution of the problem is highly desirable.

1. I venture to say that no positive evidence has been submitted showing any ill effect of swill upon cows fed with it. The evils attributable to it are largely, if not entirely, to be ascribed to the unsanitary surroundings of the animals.

2. Whatever evidence has any positive value indicates that swill is equally as good and proper food (used with judgment) as hay, dried fodder, ensilage, or bulbous roots. These all differ widely in chemical composition from the green foods (grass, clover, green oats, and corn), which may be looked upon as the normal food of cows.

3. It may be worth while remembering that lactation in a dairy is not a normal process. Dairy-cows are "milk-machines." The dairy business would not be very profitable if lactation were not forced to some degree.

4. Experienced agriculturists, like Professor Armsby and Dr. Sturtevant (*Science*, ix. pp. 602-3), have failed to see any ill effects attributable entirely to swill, and such veterinarians of ability as Pro-

fessor Law and Dr. Salmon (*Ibid.* p. 552) corroborate this testimony.

5. The facts collated by Professor Brewer (*Ibid.*, p. 550), showing the ready absorption of germs and odors by milk, the transmission of the flavor of various odoriferous substances eaten by the animal to the secretion, the passage of certain drugs administered medicinally into the milk of nursing women, or the notorious fact that swill-milk stables are "proverbially foul and stinking," have no bearing upon the case. The evidence required to establish the unwholesomeness of swill as food for milk-giving animals must be of a different character.

6. While it may be conceded that "chemical analyses will not settle the question" of the wholesomeness of swill-milk, the fact remains that we have at present no other way of determining the physical qualities of a specimen of milk. Bacteriological investigation may determine the presence of the germs of tuberculosis, typhoid, and, in view of recent discoveries, of scarlet-fever, but will not enable us to ascertain the relative proportions of the saccharine, fatty, aqueous, or proteid matters present. Chemistry is here still our main-stay, and, other things being equal (more definitely, disease-germs being absent), a specimen of milk nearly approaching the chemical standard established by Koenig may be looked upon as a wholesome food. Other factors besides the food of the animal enter into the production of milk. The age of the animal, period of lactation, time when the milk is drawn, and general sanitary condition, must not be ignored.

7. The asserted greater firmness, and consequent indigestibility, of the coagulum in swill milk is not based upon a sufficient number of observations to admit of unquestioned acceptance. It should be easy to determine this in any chemical

laboratory. No single series of observations would decide this, however. It would be necessary to test milk from cows fed upon swill but kept under good sanitary conditions, side by side with milk from animals kept under the ordinary conditions of city stable-life, and fed upon various foods.

8. A scientific solution of the question will not be furthered by prejudiced appeals or unreasoning denunciation. Patient investigation, keeping in view all circumstances of the question, and avoiding all one-sidedness in considering the matter, will alone bring about the object desired. Personally, I at present occupy the same standpoint as Professor Armsby (*Science*, x., p. 4), "Much of the common prejudice against the use of distillery-slops appears to be occasioned by their irrational application, and frequently by the filthy surroundings of the animals, rather than by anything injurious in the feeding-stuff itself."

—◆◆— AIMEE'S HABITS.

In commenting on the recent death of Aimee, the famous opera bouffe singer, the *Philadelphia Press* says: "It is hard to believe that Aimee was almost fifty years old. Yet she was born in Lyons in 1838. She preserved her youth and health in a marvelous manner. Her complexion was clear and smooth, like Mrs. Langtry's. She had a round full face, with pronounced features, strong white teeth and cold gray eyes. She was temperate, and very careful and dainty about her toilet. She kept no maid. She used to bathe her feet in cologne after a walk, and to change her stockings with every change of costume. Her stockings cost about \$6 a pair, and she wore out five dozen pairs a year. As a consequence her feet were as pink and white as an infant's. She wore a \$40

corset with every dress, and had a manservant to lace her corsets up."

—◆◆— WHAT A HUMAN BEING IS WORTH.

The *Monthly Bulletin of the Iowa State Board of Health* tells us that the courts fix the value of a person killed by the railroad at \$5,000, but vital statistics fixes the value of an adult person to the State at \$750; and the annual productive power at \$95.

The relative market value of the different parts of the human body has been calculated by a German mathematician, as a basis for the award of damages in case of disablement. The loss of both eyes, both arms, both legs, hands or feet is put at 100 per cent.; right hand, 60 per cent.; right foot, 50 per cent.; left hand, 40 per cent.; right thumb, 33½ per cent., an eye, 22 per cent.; left thumb or right fore-finger, 14 per cent.; left fore-finger, 8 per cent.; any other finger on the left hand, 4 per cent.

—◆◆— AMERICAN LARD IN ITALY.

Recent analyses made of the American lard found in Italy (says the *National Druggist*) show that it contains from 12 to 15 per cent. of water. This adulteration is accomplished by the addition of from 2 to 3 per cent. of alum and 1 per cent. of caustic lime. It perhaps would be well to examine the American lard consumed in America, and see if it is not pretty well watered. Of course, the water is not as injurious as the salts introduced to hold the water in suspension.

—◆◆— INSPECTING NEW JERSEY DRUGS.

State Dairy Commissioner Newton has begun an inspection of the drugs sold by the retail stores all over the state. His two deputies are now at work securing

samples of all kinds, particularly the medicines that are used in families and are procured without a prescription. They will also look after the goods sold in the country stores to the rural consumers. The packages have been handed over to Shippen Wallace, the state chemist, for analysis. Some of the drugs do not come up to the standard and prosecutions will soon begin.

JOHN BRIGHT ON TEMPERANCE.

John Bright, writing to a Canada man on the temperance question, says: "The whole question and its solution must depend on public opinion, which may agree to restrictions which are important, but will for a long time, and perhaps always, refuse the absolute prohibition. It seems that a severe system of taxation is almost the only remedy which can be adopted with much hope of success."

STRAWBERRY WINE.

From the *Savannah News* we learn that a few of the strawberry growers around Lawtey, Fla., experimentally, are making wine of the surplus strawberries. Some 3,000 gallons are in sight. Strawberry wine, made by parties there, one and two years old, has been pronounced by the best wine experts as equal to the best California wines.

NERO'S DESCENDANTS.

Professor Cope, in the *American Naturalist*, calls attention to the fact that the Nero type of physiognomy is becoming frequent among the weaklings who lounge about club-rooms and are taught to do nothing but gratify their senses.

PROFESSOR SAMUEL G. DIXON.

Dr. Samuel G. Dixon has been elected Professor of Hygiene in the University of Pennsylvania, to fill the vacancy caused by the death of Dr. N. Archer Randolph.

ONE LESS JOB FOR THE FOOL-KILLER.

A girl at Warren took arsenic to whiten her complexion. It is very white now, but as the girl is dead she takes but little pride in it.—*Pittsburg Chronicle*.

THE LIQUID REFERRED TO THE SOLID.

A Dakota farmer proposes to cure Socialism by having the Socialists take land. But they won't. They take beer.

NO TOBACCO FOR THE LADS OF ILLINOIS.

The Illinois Legislature has very properly passed a law recently which prohibits the sale of cigars, cigarettes, and tobacco to lads under sixteen years of age.

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The Annals of Hygiene.

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No. 11.

Special Articles.

SALICYLIC ACID IN BEER.

In our issue for September, we published an article on "Adulteration in Food and Drink," by Dr. E. H. Bartley, Chief Chemist to the Brooklyn Department of Health, in the course of which it was stated that many beers contain salicylic acid, even to the extent of 12 or 15 grains of acid to every ten glasses of beer. Such an adulteration, we felt, for several reasons, was very reprehensible. In the first place, salicylic acid is not a part of the human body; it is a foreign element, and is therefore not nutritious. Again, even though opinions may somewhat differ as to whether salicylic acid is or is not injurious, yet it seems to us quite certain that when taken into the system in such quantities as it would be by free drinkers of beer it must prove harmful and would be very apt to derange digestion, which is one of the detrimental actions of salicylic acid. Thus, it is not at all uncommon for many men to drink ten glasses of beer daily, and we feel sure that the ingestion of 12 or 15 grains of this acid daily for a long time would certainly prove detrimental to health. Finally, we were impressed with the fact that as physicians quite frequently order beer for their patients as a tonic, it was of the utmost importance that they should be informed on this subject, for it is not

at all unlikely that the ingestion of salicylic acid might not be compatible with the other drugs that were being used. If we were to venture an opinion, we would say that beers without salicylic acid were to be decidedly preferred, both medicinally and for popular use; the acid cannot prove beneficial, and it is very likely to prove injurious.

In support of our own views we note from *The Sanitary Era*, that "A Commission, appointed by the French Academy of Medicine, at the request of the Minister of Commerce, and composed of prominent physicians and chemists, such as Berthelot, Bergeron, Roussel, Proust, Brouardel, Vallin, and others, has submitted a report, in which it is declared that the daily and long-continued use of even small doses of salicylic acid has been demonstrated, by medical observation, to be able to produce evil effects in feeble and sick persons, and that the use of salicylic acid as a preservative of food or drink should therefore be forbidden. (*Bulletin of the Academy.*) A Swiss sanitary journal warns against the use of salicylic acid as a constituent of mouth-washes which has been repeatedly recommended. According to Mr. Schlenker, a dentist of St. Gallen, a sound tooth loses its gloss completely when placed for a quarter of an hour in a solution of salicylic acid of the strength of 1 in 1,000. Parreidt has shown that salicylic acid dissolves phosphate of calcium, which is the

most important constituent of the teeth."

With these ends in view, we bought in the open market thirteen bottles of different kinds of beer (buying only the *bottled* beer, because we reasoned that such only would be likely to be ordered by the physician), completely removed all evidences of their identity, and sent them to Dr. Henry Leffman, Hygienist and Food Inspector of the Pennsylvania State Board of Agriculture, whom we requested to examine them for salicylic acid. Dr. Leffman did not and does not (until he reads it here), know what beers he was examining. The bottles were sent to him numbered, and he makes his report by numbers. From his report we are enabled to announce that the following beers are free from salicylic acid, while all the remainder sent to him contained it:

1. Rochester Stock Lager (Bartholomay Brewing Co.).
6. Vienna Beer (Germania Brewing Co., Philadelphia).
4. Champagne Lager Beer (H. Clausen & Son Brewing Co., New York).
2. Budweis (Prospect Brewing Co., Philadelphia).
3. Munich Beer (Germania Brewing Co., Philadelphia).
5. Royal Lager Beer (H. Clausen & Son Brewing Co., New York).

CHOLERA.

Since our last issue we have the following information in reference to the cholera. The College of Physicians of Philadelphia appointed a special committee, consisting of Drs. J. C. Wilson, E. O. Shakespeare and R. A. Cleemann, to visit the ports of New York, Philadelphia, and Baltimore and report upon the subject. Their report was made October 28. Their opinion is that the facilities for preventing the introduction of the disease

at the ports of Philadelphia and Baltimore are totally inadequate, owing to the absolute want of buildings for isolation and observation, as well as facilities for disinfection. The buildings and the disinfecting apparatus at the port of New York are ample, but the police regulations are not efficient. Thus the island of observation is guarded by *one* policeman only, though it covers an area of three or four acres. Again, there is no resident physician on either the observation or the isolation islands, only a man, who has attended a few medical lectures, being present to minister to the patients in the intervals between the visits of the health officer, who is a physician. According to Dr. J. C. Peters, of New York, who took part in the discussion of the report, this state of affairs is owing to the fact that a large portion of the revenue derived from quarantine is absorbed for political purposes, not leaving enough to provide for resident physicians and efficient sanitary police. The revenue is at least \$50,000 per annum; the health officer's salary is \$10,000, the expenses \$17,000, and the balance, according to Dr. Peters, "*fades away, no one seems to know where.*" Dr. Wm. M. Smith, the health officer, is an intelligent, capable man, who does his best under the circumstances. It would seem that all danger of cholera from the "*Alesia*" is passed, and that from this source, at least, the country is free from danger. The "*Britannia*," a sister ship of the "*Alesia*," has been detained at quarantine, but it is probable that no cases, or, at most, but very few will there develop. The "*Independente*," a vessel from infected ports, was allowed to discharge her cargo and passengers without disinfection, and many of the latter with their clothing, in some cases packed within twenty miles of Palermo (an infected place), have scattered

over the country. Some of these persons have been found in Chicago, and their clothing disinfected; one was found in Baltimore and his clothing was burned. It is supposed that there are some yet un-found in Chicago, several in Buffalo, N. Y., and several in Philadelphia.* If this clothing is infected, it may serve as a starting place for an epidemic of the disease. At the present writing (November 1), we have good reason to feel that the country is free from any immediate danger, but when we realize how poorly protected most of our ports are, and how inefficient is the sanitary police of the port of New York, we must recognize that we are in daily danger of a fresh importation of cholera that may gain a foothold. The committee referred to in the beginning, strongly recommend national quarantine, and they have been directed to communicate with medical societies throughout the country in reference thereto.

REPORT OF THE SIXTH INTERNATIONAL CONGRESS OF HYGIENE.

BY DR. PINS, OF VIENNA, AUSTRIA.

(Specially made for THE ANNALS OF HYGIENE.)

The Sixth International Congress of Hygiene and Demography was held in the great hall of the Conservatoire, in Vienna, from September 26 to October 2. Though this splendid hall will accommodate 3,000 persons, it was well filled at the opening. All the highest officials of

* It should be stated that the Quarantine officer of New York denies this statement. He reports to Surgeon-General Hamilton, that ever since cholera invaded Italy in 1884 every steamer with passengers from Italian ports on its arrival at Quarantine has been detained until every package of baggage could be opened and disinfected.

This, however, is again contradicted by *The Press*, (Nov. 2), which says that five of the passengers of "The Independente," whose baggage was *not disinfected* have been found in this city. There seems to be some confusion on this question. We also learn, under date of Nov. 2d, that cholera has occurred with two deaths on the "Brittania." The mistaken policy of concealment was adopted, calling the disease measles.

Austria, as well as the foreign ministers were present at the opening.

At 11 o'clock, the Crown Prince, Rudolph, of Austria, entered the hall. The President of the Congress, Professor Ludwig, made a short speech, in which he portrayed the rapid progress of the science of hygiene, and argued that these Congresses are happy indications of the spirit of the times, for here, he argues, we find questions affecting the welfare of mankind taken up not by one nation alone, but internationally.

The Crown Prince then said, "Honorable gentlemen: My heartiest thanks are due your president for speaking of me in such kind terms. I beg you to believe, gentlemen, that it is both a pleasure and an honor for me to be the patron of this Congress. The most precious capital of a State and of Society in general is the *man*. Every single life represents a positive value. To maintain that life and preserve it intact, so far as the unalterable limit of life, is not only a dictate of humanity, but it should be the duty of all commonwealths, in their self-interest. A man, however ample his means may be for preserving his own health, stands powerless before the pernicious influences of general nature, by which we are surrounded. In these cases, concerted action must come to the rescue. Hygiene and Demography will help us to accomplish this important task; both of these based on a scientific foundation will show us the way of attaining practical aims in the prevention of disease. If we look at the reports of the different speakers of this Congress, we are surprised to see that the science, to which we are referring so zealously, includes all branches of life: the house and the school, production and war, towns and villages, traffic and industry.

"The participation of such illustrious

representatives of all nations and states in to-day's assembly is a proof of the *true international importance* of Hygiene. It is a great satisfaction for me, gentlemen, to welcome you to this city, which is a centre of serious scientific work and of thorough researches.

"In the name of His Imperial Majesty, our Lord and Master, I declare the Sixth International Hygienic and Demographic Congress opened."

After the usual formalities, Professor Brouardel, President of the Hygienic Consultation Committee at the Ministry of Commerce in Paris, was the first to speak, on "THE MODE OF PROPAGATION OF TYPHOID FEVER." He mentioned the latest discoveries in this direction and their consequences, and endeavored to demonstrate that we have it in our power to make Typhoid a very rare disease. It is propagated by (1) Drinking water, (2) the air, (3) by filthy clothing and by the hands of nurses. Hippocrates, Van Swieten and others so believed centuries ago, but it has been reserved for this day and generation to discover in what degree every one of these factors contributes to the propagation. In 1884, there was an epidemic of Typhoid in Geneva, the localized occurrence of which corresponded exactly with the condition of the water in the different parts of the city. Paris has excellent drinking water, but the supply is not sufficient, and it becomes often necessary to use the water of the Marne, the Seine, and of the Ourcq Canal. Such an emergency arose on the 20th of July of a certain year, and one week later the number of Typhoid cases was four times greater than it had been the week before. On the 7th of August, the use of these waters was discontinued, and immediately the effect was shown by a rapid decrease of the epidemic. The same thing was repeated in the month of

January of this year. There is yet another striking argument to demonstrate that typhoid is caused by drinking water. Regnier has noted the number of diseases in the different barracks in Paris, and found, for instance, that in the new well constructed barracks, Château-Lardou, in which the soldiers did not drink filtered water, 17 per cent. were sick, whilst in the old barrack of Jean-Jacques-Rousseau, which has good water, there were only 7 per cent. After having introduced (in 1886) spring water in the former barracks, they had only 2 per cent. of sickness. These opinions of Brouardel are strengthened by the history of Typhoid in Vienna, before and after the introduction of the excellent "Hochquellen" water, the viaducts being completed about fifteen years ago.

This epidemiological fact finds a powerful support in the results of microbiological inquiries. After Eberth had discovered the typhoid bacillus, it was necessary to prove that waters which were known to have caused typhoid really contained it. This fact was denied by many, some even claiming that every kind of water, though rich in organic substances, is pernicious to the development of pathogenic bacteria. But from experiments, as well as from direct observations, it was proven that the typhoid bacillus is able to live in water and develop itself there.

That the bacillus is spread by the air in breathing, we have also many substantial proofs. The dejections of a diseased man are thrown away on a dung-hill. Five weeks later the dung is removed by five workmen, and four of them contract typhoid, while the fifth has an intestinal catarrh. The dejections of these diseased persons, in turn, were brought also to a dung-hill, and of the two workmen who took them away, after nine months, one of them dies of typhoid. Then Brouardel

introduced Pettenkofer's theory, according to which the typhoid-curve depends on the changes in the level of the ground water. There is a great deal of truth in this theory, but it is incomplete. When the ground water sinks, the streams of water experience also a diminution of inflow, and what is still more important, a current is developed which drives organic remains to deeper places. The possibility of direct propagation is easy to be comprehended, but this mode of infection is, according to Brouardel, proportionally rare.

However, concludes Brouardel, if in one hundred cases water propagates typhoid ninety times, the water ought to be preserved from defilement, and, luckily, this is easier than if we were obliged to prevent the air from imbibing waste matter.

Then followed Pettenkofer's speech on "The Teaching of Hygiene at Universities and Technical Schools." (See page 417.)

After that, the honorary Presidents were named.

In the afternoon of the first day, the members of the Congress were received by the Chief Magistrate of Vienna in its new town hall, where about twenty-five hundred persons were present; music was bountiful and a luncheon was offered by the city of Vienna.

On the evening of September 29th, the Imperial Opera House was gratuitously offered to the guests for an entertainment.

On the evening of the 28th, all the members of the Congress were invited to appear at the Imperial Court, where they were received, in the absence of the Emperor, by the Crown Prince Rudolph. A handsome entertainment was provided.

INTERNATIONAL RESTRICTION OF EPIDEMICS.

Dr. Sonderegger, of St. Gallen, Switzerland, stated that all preventive meas-

ures against epidemics are based upon the belief that a contagium exists. But there must be also local conditions that will favor the contagium. The bacteriological discoveries of recent years have not weakened but rather strengthened this idea of the necessity of local conditions, while the factor, unknown formerly, that caused an epidemic to break out when local conditions were favorable has now become visible and palpable. It is a fact that, in our day, the contagium of disease can travel from place to place with more rapidity than can the man who has helped to propagate it. On this account the establishment of Sanitary Cordons seem unnecessary, and in most cases pernicious; the establishment of sanitary police in small states or single provinces is ridiculous. In great countries, Italy (1884), Spain (1885), and earlier in Russia, Austria, Germany, France and England, epidemics have remained stationary, and, in spite of frequent intercourse and traffic, they do not spread over the neighboring states. The local conditions and the susceptibility of the people is not everywhere the same; the most contagious diseases therefore constitute epidemics, but seldom develop into pandemics. Every country should have a central place for public sanitary service. Now-a-days the only efficient sanitary police is an international one. The first and most important point is the notification of every single case of contagious disease, which should be made by the physician and the head of the family. These announcements should be made as early as possible to the central sanitary authorities of the city or district. This authority should prescribe the sanitary measures required by the locality and surroundings of the sick person, and should, at the same time, furnish a report of the case to all neighboring

sanitary authorities. It is not necessary or advisable to publish these facts in the newspapers, as it might create unnecessary alarm; only when the epidemic has assumed greater proportions, is it right to publish each day, the number of cases and deaths, that the people may not exaggerate the true state of affairs and create a panic. The second essential is the immediate and complete isolation of the patient, for which purpose every city ought to have a suitable building.

In the third place a service of observation should be established for the healthy population, (a) at the place where the epidemic broke out, (b) at the various ports of entry in other countries. Vessels should be carefully examined and kept very clean, but quarantine for all travellers is very unnecessary and should not be tolerated longer than twenty-four hours, merely long enough for purposes of examination. Then comes disinfection of evacuations and clothing. The old methods of disinfecting, particularly with sulphur, should be abolished, as they are useless. An apparatus for disinfecting with steam heat ought to be provided in all cities, sea-ports, and chief postal stations. Such a precaution should be as usual as is the presence of fire-engines. The different states of a continent should counsel together as to the best method of details for the accomplishment of these indications and should modify their plans as often as the progress of science requires it. At present we are acting in accordance with the recommendations of the Sanitary conference in Rome, in 1885. There should be a central sanitary bureau for each continent, which need have nothing to do with scientific questions or possess administrative power, possessing only the properties of a centre of mediation. It should have the following duties:

1. To receive official communications relating to contagious or epidemic diseases from the central office of each state or country.

2. These communications must be made known to the central office of all states or countries at once, that preventive measures may be inaugurated in time.

3. This office must receive and consider the suggestions of all countries, acting as a mediator between them.

Such an office should be located in one of the smaller countries, such as Belgium, or Switzerland, that it may be, as far as possible, removed from political influence. When we come to thoroughly realize the amount of misery caused by carelessness, then will we be willing to make such a penal code as England did in 1883, and thereby will we insure the regularity of international sanitary service. Since epidemics always cause heavy losses through their paralyzing influence on industry, all means of prevention are true questions of national economy. But we must not be satisfied with talk; action is necessary.

Dr. Shirley F. Murphy, of London, said that he indorsed in general, these remarks, but he did not thoroughly understand the expression "International Sanitary Police." The use of the word International would seem to imply the existence of a body of men whose action in any country would be guided or ordered by some authority other than that of the country in which they are employed. He continued: "I regard that as an impossibility. The proposal that there should be a Central International Sanitary Office for the purpose of receiving from and distributing to all countries information would, I believe, be a less satisfactory method for this object than for a central bureau to be established in *every country* for the purpose of receiving

information as to the prevalence of disease in their districts and towns, the knowledge thus obtained to be immediately communicated to the representatives of the different powers. In this way much time would be saved, which would be occupied by communicating this intelligence in the first instance to an international bureau."

The further proposal that such central international bureau should publish recommendations is, I think, surrounded with difficulties, amongst them that it would require each country to be constantly represented by a specially competent person to share in formulating these recommendations. I would submit that the *holding of frequent conferences* would better attain the object in view.

Experience has also taught us the uselessness of putting faith in quarantines. The system which Great Britain substitutes for quarantine is that of medical inspection. The international arrangements which may properly be enforced at the present time, are therefore,—

1. The appointment of a sanitary authority at every port whose duty it should be to possess information as to the sanitary condition of the port, the health of the passengers and crews of vessels arriving or leaving the port.

2. Every country to possess a central office to which should be sent reports of the number of cases of specified epidemic diseases occurring in every large town and port during each week, immediate notice being sent of cases of cholera.

3. Precautions to be taken by the sanitary authorities and officers of vessels as already indicated to prevent the embarkation of persons or articles infected with cholera.

4. A station to be situated on the Suez Canal for the purpose of obtaining information regarding the health of passengers and crews of vessels bound for

Europe, but not for their detention for more than the time necessary for procuring this information.

5. This information to be placed at the disposal of representatives of the different governments.

THE FACTORS OF LONGEVITY.

Professor Corradi, of Pavia, remarked that Aristotle calculated the age of man and animals by the duration of pregnancy and growth. According to Flourens, growth lasts till the bones are united with the epiphyses; in the man until his twentieth, in the horse until his fifth, in the dog until his second year, and so on. If we multiply this age by five we have the normal duration of life, so that man, therefore, should live to be one hundred years old. The oldest man whose age has been attested was Henry Jenkins, aged one hundred and fifty-seven years, whose age coincides with the rule given by him that the duration of growth multiplied by eight represents the utmost limit of life.

Professor Cexis found that among one thousand persons of both sexes 39.6 reached or surpassed their seventieth year, which number precisely agrees with those given by other scholars. As to people aged a hundred years there is no certain type, but sex is an important factor. In 1881 there were in Italy, among 380 persons a hundred years old, 247 women and 133 men. This difference in favor of females is not accounted for, unless it be due to the greater equanimity of their lives. Of course heredity plays a part in longevity, but it is not all-important. It is the task of hygiene to remove the causes of casual and premature deaths, and by so doing create strong generations of men, from whom will spring a race of centenarians. We must educate our children in hygiene, and we must realize that long life is not to be secured by pills, juices, and pretended arcana, but by hygiene.

The most important result of the Congress in the dominion of science, I believe, to consist in the mutual concessions made by both the schools of Contagionists and Localists, which concessions have almost completely equaled the differences formerly existing. The Contagionists (represented at the Congress by Brouardel from Paris) agreed that the contagium, although coming in the first place from the patient, yet, when drained to the underground water, returns by it into the natural sources of water, and so the quality of the soil, *i. e.*, the state of the underground water must be really acknowledged as potentially influencing the origin as well as the fluctuations of the extent and intensity of epidemics; they still deny the quality of soil to be the *only* source of epidemics. Besides this they announce some other ones, as the direct transportation by clothing, etc., and by air. Besides, therefore, protecting the water from being contaminated (which is, doubtless, the most necessary) the other factors must also be attended to.

Pettenkofer (as the representative of the localistic school) acknowledges in return the importance of bacteriology in the causation of infectious diseases, and, although perfectly sustaining his theory of the influence of locality, he grants the micro-organisms to be of great ætiological importance; still he believes some factors, till now unknown, to be wanted for their development, which factors are supposed to be of local and temporary character, and, according to his own observations, solely consist in the quality of the soil and in the fluctuations of the surface of underground water. Both schools acknowledge, therefore, the importance of looking to the drinking water in time of epidemics.

ON THE QUESTION OF INOCULATIONS IN CASES OF HYDROPHOBIA, Dr. Cham-

berland (Paris), Pasteur's substitute, remarked that the amount of mortality among inoculated persons does not exceed one and one-half per cent. The reproach that certain inoculated persons grew ill in consequence of the inoculation is contradicted by the experiments that have been made thereon.

Dr. Bordoni (Turin) has experimented on animals and proved how correct Pasteur's opinions are. He has also inoculated one hundred and nineteen persons, only three of whom died of hydrophobia.

Dr. Frisch (Vienna) declared himself against Pasteur's method. In preventive inoculations we have to do with an unknown matter of vaccine. He thought it is necessary to make further inquiries, and believed the practical side of inoculations for persons not yet developed enough to pass judgment on it.

The celebrated biologist, Professor Metschnikoff, from Russia, referred to the results of experiments made on animals and to inoculations practiced on people. 713 persons who had been bitten by mad animals were inoculated. At first, after using virus five days old, the conditions of mortality were relatively unfavorable. Then, stronger virus two days old was used, and the statistics of mortality showed an important decrease. From 532 inoculated with stronger virus, only 2.6 per cent. died.

He concluded that the results obtained at the bacteriological station in Odessa speak decidedly in favor of Pasteur's discoveries.

DECISIONS OF THE CONGRESS.

Concerning disinfection: (*a*) It is desirable that in every country disinfection be made *obligatory* by law; (*b*) a competent official, with ample apparatus, ought to be at the service of the people, and gratuitously so for the poor; (*c*) among the infectious diseases requiring

disinfection, consumption should be included; (*d*) the number of disinfecting measures should be as limited as possible; in the first place, boiling in water, steam heat, of almost 100° C., corrosive sublimate 1 part to 1000, carbolic acid solution (5 per cent.); (*e*) *fumigations*, particularly those with sulphur, are to be abandoned.

(2.) CONCERNING ISOLATION: The discussion was participated in by: Bohm (Vienna), Spencer Wells, Caro (Madrid), Douglas Galton, Rauchfuss (Petersburg), and Felix (Bucarest). It was decided: (*a*) Isolation is indispensable for the suppression of infectious diseases and plagues. (*b*) It is the duty of governments and communities to provide for an efficacious isolation of infected people, if they cannot be thoroughly isolated in their own homes. (*c*) The isolation of contagiously diseased people must be observed in public hospitals. (*d*) Isolation hospitals make the most efficacious isolation possible, and must be used in the case of the more serious infectious diseases. (*e*) Isolation hospitals ought to be separated from neighboring buildings by gardens, squares, wide roads or by a wide girdle of trees. (*f*) Special conveyances should be provided for the transportation of the sick.

(1.) After lively debates, in which Kohn (Breslau), Löwenthal (Lausanne), Wasserfuhr (Berlin), Mosso (Italy), Napias (Paris), took part, the necessity of appointing school-physicians, such as they have in France, Germany, Switzerland, Sweden and Hungary, was acknowledged.

(2.) Concerning the TEACHING OF HYGIENE IN THE SCHOOLS it was decided:

(*a*.) It is the duty of the State to see that the people learn the most important of the requirements of hygiene.

(*b*.) In the lower schools for both sexes simple instruction as to the constitution and functions of the human body, and the

principal conditions of maintaining health should be the rule. In schools for girls a more detailed explanation as to hygienic conditions of dwellings and care for their bodies and food, are the principal questions to be taught.

(*c*.) It is desirable that in medical schools hygienic teaching should be united with the regular course. In the high school for girls hygienic teaching is indispensable.

(*d*.) It is absolutely necessary that for physicians hygiene (both experimental and practical) be obligatory in teaching and examination. In medical schools we must, therefore, have such chairs.

(*e*.) In technical high schools hygienic teaching is necessary, particularly the hygiene of artisans and of trades.

(3.) As far as the question of ADULTERATION OF FOOD was concerned, no decision was reached; simply a permanent international committee appointed consisting of Brouardel (Paris), Poucher (Paris), Hilzer (Erlangen), to study this question and to make their report to the next Congress.

The greatest interest of the Congress was concentrated in the third section, where the most prominent members (Pettenkofer, Brouardel, Virchow, Sonderegger, Finkelnburg, Gärtner, Smith, Roth) expressed their opinions.

The accepted conclusions were: (1.) The international epidemic regulations proposed by Sonderegger with the addition of Murphy's propositions on the uselessness of quarantine. Instead of quarantine was recommended the inspection of vessels by physicians. But vessels ought not to be detained longer than is necessary to decide that no epidemic exists on board.

(2.) On the DRINKING WATER question Brouardel's resolutions were unanimously accepted, also Pettenkofer's. On account

of the proved possibility of disease originating by infected drinking water, the care for a good unsuspected drinking water is one of the most important measures of hygiene.

(3.) On the question of PREVENTIVE INOCULATION AGAINST CARBUNCLE (Milzbrand) OF DOMESTIC ANIMALS AND SWINE ERYSIPELAS, the following proposal by Lydtin (Carlsruhe) was accepted: It is desirable that exact experiments be made under the control of competent authorities, with the help of governments or agricultural societies, on preventive inoculations against carbuncle and swine erysipelas and pleuro-pneumonia of cattle. Concerning MATCH FACTORIES, the proposal of Vlemingst (Amsterdam) was accepted. Instead of the usual white phosphorus, as hitherto used, only amorphous phosphorus should be employed. As far as the use of LEADEN PIPES FOR THE CONVEYANCE OF WATER is concerned, after the report of Professor Hamon (Boulogne), the Congress came to the conclusion that they should decidedly be abolished, while on the other hand the argument to make use of nickle plated housekeeping utensils does not seem to be fully justified.

The next Congress will be held in London in 1891. In the permanent committee for preparing it, have been named Brouardel (Paris), Corfield (London), Murphy (London), Gruber (Vienna), Gross (Buda-Pest), Dobroslavine (Petersburg), Mosso (Turin), Billings (New York).

In connection with the Congress there was an exhibition of objects connected with hygiene. Among these, were prominent, a movable disinfecting apparatus for using compressed steam by *Hemsberg* (Berlin). Every large town in Germany or Austria possesses a specimen of the apparatus for refining petroleum by sulphuric acid, with particular reference to

guarding the workmen against the influences of sulphur dioxide gases by *Nawratil* (Lemberg). A *Haemometer*, an apparatus for the appreciation of the hæmoglobin in human blood (in ænemia) by Professor *Fleischel* (Vienna). The newest models of school-benches; apparatus for ventilation; different methods for preservation of vaccine matter; several systems of canalisation and apparatus for filtering water. There were also graphic representations of the relations between ground-water and infectious diseases, by *Pettenkofer*, *Kohn* (Breslau), *Claude* (Paris), *Roth* (London), *Boeckh* (Berlin).

Particularly instructive was the graphic plan of the typhoid-curve in Vienna as it was before introducing the fountain-water and is now, by Professor *Drasche* in Vienna.

On Sunday, October 2, the Sixth International Hygienic Congress was closed with the usual formalities. Professor *Gruber* of the Technical High-school, as the general secretary of the Congress, referring to the labors of the sections, declared them to be of eminent importance for the future of hygiene, because most of the questions were of a practical nature and the decisions were almost unanimous. If only a portion of them are executed by governments and municipal authorities, one hundred and thirty of which were officially represented at the Congress, it will be of great use to mankind.

MODEL GIRLS.

Three girls of Aroostook, Me., walked from Ashland to Portage Lake, rode across the lake, ate their dinner and returned to Ashland in the afternoon, having walked eighteen miles. The same girls can travel on snow shoes, ride horses, milk, teach school and play the piano.

Communications.

THE TEACHING OF HYGIENE AT UNIVERSITIES AND TECHNICAL HIGH SCHOOLS.*

BY PROFESSOR MAX VON PETTENKOFER,
OF MUNICH.

In former times hygiene was not regarded as a science, but rather as an art, acquired by personal experience. Art and knowledge always precede science, which supposes facts that arise quite unconsciously. There are many who do not consider hygiene worthy of attention, just as many are accustomed to look down upon rural schools, academies, etc. Just as the husbandman learns empirically how to till the soil, so does every intelligent person instinctively recognize that which suits and that which does not agree with his body, and learns to use the one and avoid the other. What need then, is asked, for professors to tell us that which our own senses makes evident to us? Indeed, until recently hygiene has been cultivated in an individual empirical way, from which, however, we have acquired a number of valuable experiences. Why not go on in this way? Why enter the dark, unexplored paths of scientific discussion? Empirical hygienic knowledge has been acquired by instinct, as it were, ever since the beginning of time. But such methods will not satisfy us in this enlightened age, for we know now that hygiene is truly a science and that wonderful results will surely follow its scientific development.

Health is certainly a valuable possession for a man, and hygiene becomes, therefore, an important part of national econ-

omy, which fact is nowhere better demonstrated than by Lorenz Stein in his writings on hygiene and the State. Just as national economy, ordinarily understood, teaches the economy of the ordinary things of life, so the science of hygiene proposes to teach the economy of health. Allow me to offer you some proofs that money spent for the preservation of health is money well invested. Just as we transmit other worldly goods, so is health an entity with which we can endow our offspring. Even in time of war, when we can only attain certain ends through the sacrifice of life, the health of the army should be our chief consideration. Up to the present time it has been our sad experience that during wars more soldiers die of disease than are killed by the enemy. While the proportion of those killed in battle to those dying of disease during the Crimean war was as 100 to 375, during the Franco-Prussian war it was as 100 to 43, or a difference of 332 per cent. Also in time of peace, when we all struggle for life, then is the blessing of health to be felt. Statistics tell us that a person is sick on an average about twenty days out of the three hundred and sixty-five. The expenses of cure, maintenance and loss of wages may be set down, on the average, at two marks a day, which, for a city with a million of inhabitants, such as Vienna, means an annual loss of 42,000,000 of marks. From this it is easy to calculate what pecuniary value the lessening of the mortality rate has and how valuable would be the reduction of even one in one thousand. In Vienna the mortality of 30 per thousand represents a loss of 42,000,000 of marks, while one per thousand means 1,400,000 marks, so that if the death rate were reduced only from 30 to 29, it would mean a saving of nearly 1,500,000 marks. This fabulous

* Abstract of address before the International Congress of Hygiene at Vienna. Specially reported for THE ANNALS OF HYGIENE, by Dr. Pins.

sum of money must not be regarded as capital—it is merely interest that this one city patiently pays every year. 42,000,000 of interest capitalized at four per cent. means the enormous sum of 1,050 millions of marks, while one per thousand of the general mortality for a great capital like Vienna, represents a capital of 35,000,000 of marks that ought to yield interest. We thus see how well would be expended the money necessary to found institutions that would furnish us with the means of preventing disease, maintaining health and strengthening it. No intelligent person doubts that hygiene can impart such knowledge. All highly civilized nations have ever fostered hygiene, so far as the light of their times allowed, from the old Egyptians and their disciples, the ancient Jews, Greeks and Romans, even down to the present day.

There are three professions that are especially concerned with the science of hygiene, namely, physicians, architects, and engineers, as also are the various officials of all public boards; the better informed these people are in hygiene the better is it for the welfare of mankind.

Of the more important question in connection with hygiene are the following: THE AIR, of which each individual inhales about 18,000 pints in twenty-four hours; FOOD and WATER, and the economy of the temperature of our bodies. More than 80 per cent. of the heat that is produced within the body must be given off by radiation from the surface, hence we can understand that the care of the skin is of the greatest importance. To aid us in our continual struggles with the vicissitudes of the atmosphere we must make use of clothing and houses, as armor, so to speak, so that the garments we wear, the construction and maintenance of our dwellings; the way in which they are heated, ventilated, and lighted,

form the very elements of domestic hygiene. A very important question relates to the ground upon which we build. Keeping the ground clear of all waste matter, particularly human refuse, and thoroughly draining our houses, form the most efficient means of protection against zymotic diseases. Of course, I have but glanced at a few of the subjects included in hygiene that I might impress you with its importance. Many physicians think that they need not be informed on hygiene, for hitherto they have had only to do with the cure of disease, while it is only recently that scientific medicine speaks of *preventable diseases*. The means of prevention are not to be taken from the common treasury of pharmacology and prepared at the apothecary's as are the means of cure, but they must be studied as the science of hygiene. If, in the past, a physician was versed in hygiene it was not because he was so instructed during his medical education, but rather on account of his individual scientific studies subsequently. Some learned physicians seem to regard hygiene as at best an ornamental flower in the medical garden, if they do not, indeed, look upon it as a noxious weed, to be plucked out at the first opportunity, since it tends to deprive the older and more valuable branches of soil and nourishment.

Indeed, the majority of the patrons of the new hygienic tendency are not members of the medical profession, but rather government officials and statesmen. But now, happily, the importance of hygiene and the necessity of teaching it is recognized everywhere, and in Germany its study is equally compulsory with that of the other branches of medicine. At the universities of Austria-Hungary, also, great attention is now devoted to this branch.

Hygiene is, in its nature, physiology

as applied to practical life. Hygiene has served to dispel many delusions by the light of its discoveries. For instance, how common it was once to look for the causes of disease in the vicinity of graveyards. Now, since the water, air, and soil of cemeteries have been carefully examined, we come to hold a different opinion. Water derived from wells dug in graveyards is, as a rule, purer than that taken from wells in other localities where the soil is the same.* Miguel has driven tubes into the ground in the cemeteries of Paris, pumped up the air of the graves, and has always found it free from any kind of bacteria. At the German Public Hygiene Assembly, held a few years since in Vienna, Professor Hofman and Counsellor Spiegel (from Leipzig) also demonstrated these facts to the great surprise of many.

How much yet remains to be done, even in the one question of the hygiene of manufactories. For instance, we know positively that certain gases in manufactories are pernicious, even poisonous; but as to the proportions in which, mixed with the atmosphere, they become injurious, opinions vary a thousand fold; we want some definite data.

Another undecided question is as to whether it is best to use woolen or cotton articles of dress; whether the animal or the vegetable fibre is the most desirable? So on we may say that all pertaining to hygiene should be submitted to thorough investigation, and for this purpose we want not only well educated sanitarians, but also laboratories. While a bacteriological laboratory is very essential, it is not the chief requirement. I am a great admirer of the youngest branch of the

tree of knowledge, and I entertain great hopes of its future. Bacteriology is a very young science, and it shares the fate of every new thing in being both under and over-rated. When I realize what Pasteur in France and Koch in Germany have already discovered by means of bacteriology, I would be unreasonable if I did not admit that it ought to be represented in hygienic laboratories, but it is not necessary that all sanitarians should be bacteriologists. In reference to the teaching of hygiene in technical high schools, it is a matter of course that it should be taught thoroughly in all its branches, and it is very encouraging to note the great progress in this direction. Besides the German Society of Public Hygiene, consisting of physicians and government officials, we have another society composed chiefly of engineers, in which the discussion of questions of hygiene forms an important consideration. This Society held a very interesting meeting in Vienna last week. Great improvements have been of slow and gradual growth. In the matter of artificial illumination, experience alone brought forth nothing new for thousands of years beyond the lamp and tapers that burned, producing soot and smoke, and gave but little light. Only in 1783 Argand conceived the idea of constructing a lamp that not only gave much light, but consumed the oil also, without smoke and soot, giving out only carbonic acid and water into the air. But not even Argand would have had that practical idea had not the great spirit of Lavoisier, who was beheaded in 1794, discovered the correct theory of combustion that Argand applied to the lamp. And so will the addition of hygiene to the other sciences cause the light of our lives to burn more brightly, and prevent it from being extinguished by an accidental gust of wind.

[* This evidently proves too much. Even a greater name than Pettenkofer's is necessary to overthrow the many recorded cases in which the contamination of springs has been traced directly to grave yards.—ED.]

THE HYGIENIC QUALITIES OF DRINKING WATER.*

BY DR. GÆRTNER, PROFESSOR OF HYGIENE
AT JENA.

Of water that we drink or that has anything to do with our bodies, we must, in the first place, ask that it shall not possess qualities that will make us ill. Pure water composed of hydrogen and oxygen, without any other ingredients, is seldom to be found in nature, for it nearly always contains some foreign elements that may exert a very pernicious influence. These may be classed as intoxicants, so to speak, and infections. In the water so abundantly found in nature, there are rarely, if ever, any poisonous, inorganic compounds, while the reverse holds good in the vicinity of industrial establishments, where the refuse contains poisons, which percolate through the earth into the neighboring wells. Recent investigations have demonstrated, beyond doubt, that alkaloidal substances, the result of organic decomposition can produce serious illness. Most of these poisons are not stable; they readily change into substances that are not poisonous and they are only to be found, in quantities worthy of notice, in very foul water. A much more important consideration is the question of transference of the germs of disease by water. It is self-evident that water in which disease germs have been found is not fit for use, and we should avoid such water as is even suspected of containing them. The alkaloidal poisons are only found in putrid water, and this will not be used for obvious reasons. Where the evacuations of the sick man are there is always danger of infection, and water that can, by any

possibility, be contaminated by these evacuations, must be avoided. It seems possible, also, that water which is far remote from centres of sickness, may contain germs of disease. Thus, in India, where cholera is endemic, it seems that the virus of the disease can vegetate without any person being the mediator of it, so that it would seem to be possible there for one to contract cholera by drinking water that had not been *directly* contaminated by cholera dejecta. Malaria is also a disease the cause of which has been foul drinking water; yet certainly it is not always dependent upon pollution from the human being, for malaria will exist in regions unknown to and uninhabited by man.

It makes no practical difference if our drinking water is a little muddy, providing we are sure that it is free from agents pernicious to health. So also is it immaterial if the water contains a little more or a little less carbonic acid, or, if the taste is fresh or insipid. Even a little after-taste is of no consequence so long as it does not indicate the presence of organic decomposition. Our digestion is in no way impaired by the drinking of some infusoria or micro-organisms, nor does it matter whether the water be warm or cold, save as a matter of taste. An ideal water should be fresh, clear and without taste or odor. We now pass to the methods of investigation of water. In respect to its taste, odor, limpidity, color and temperature, we have our own senses to guide us, while to discover the quantity and quality of the dissolved ingredients we must call chemistry to our aid. We must be careful in accepting figures without looking into collateral conditions, for a percentage of salts that, in one case would indicate organic decomposition, might be greatly exceeded in another without any organic refuse,

* Abstract of Address read before the International Congress of Hygiene at Vienna, and specially reported for THE ANNALS OF HYGIENE, by Dr. Pins.

owing to the greater prevalence of salts in the soil of the latter locality.

For the study of the more minute causes of disease, micro-organisms and bacteria, biological methods, *i.e.*, *culture*, are much more valuable than is the microscope, which is more applicable to the investigation of the larger bodies. To prove the truth of this assertion it is only necessary to remember that the cholera bacillus can be distinguished from other bacteria only with great difficulty by the microscope, whilst culture affords us a ready means of determining it.

It is greatly to be desired that we had some methods of determining the presence of disease germs in water, but it is seldom possible to do so, and, in most instances, we must be satisfied with recognizing the possibility or probability of infection.

As the principal causes of disease are to be found in connection with human beings and their excretions, any defilement of a water from this source suggests the possibility of an infection, and it becomes our duty to decide the means whereby this defilement may be proved. It is, of course, much easier and more certain to do this by ascertaining if there be any dissolved chemical substances in the water, which would be equally distributed, than to look for germs, which possibly, may be everywhere else but absent from the small sample examined; hence the chemical examination becomes more important than the microscopical or biological.

The substances most commonly found in water are ammonia, nitrous and nitric acids, chlorine, carbonic acid, carbonates and sulphates and alkalies.

While the presence of these ingredients in water in considerable quantities, when not derived from the soil, indicate pollution by human refuse, and infection may

be feared, yet each single ingredient has a special significance. If, in a locality where organic refuse finds its way into the water, we find in that water ammonia and nitrous acid, then we know that the refuse is as yet not dissolved; while when we find nitric acid we know that solution is complete. Water containing only nitric acid is less to be feared than when it contains ammonia and nitrous acid, or both of these along with nitric acid.

Remnants of meat that have passed unchanged through the intestinal canal of man, can be demonstrated in water by the microscope in the shape of gold yellow flakes. These flakes are derived from muscular tissue, impregnated with bile pigment. They have already been found in drinking water, as, for instance, in the water of the Southwark and Vauxhall Company, in London, during the cholera epidemic of 1881. This water was also found to contain the eggs and larvæ of Helminths. It is not possible to formulate any more definite proofs of the defilement of water by faecal discharges than those already mentioned.

The ground is a filtering bed, that retains micro-organisms with great pertinacity; hence we may conclude that water which issues from deep in the ground, and has filtered through a *compact* soil, will contain but few bacteria; while that which is found close to the surface, or below a *porous* soil, will likely be rich in germs. If we consider bacteria the causes of disease, then we can venture the assertion that "water free from germs precludes all danger of infection." Open waters may be contaminated by germs carried by the wind. We have reason to believe that all well water in cities is liable to infection, and it should only be used in time of epidemics, after it has been boiled. It is but rarely that mountain brooks or lakes, remote from centres

of population, become contaminated. It very often happens that water rich in bacteria will contain very little carbonic acid, when it will be insipid, so that this insipidity may serve as a warning.

Our opinion as to the healthfulness of a water must not be influenced merely by the numbers of bacteria that are found, unless we can determine their source. If they are abundant, and we are satisfied that they proceed from human refuse, then such water should be condemned; but where they do not so arise, or where the quantity is caused by the multiplication of a few germs in the water in question, then we need not fear infection. If we suddenly find a marked increase of bacteria in a stream of water, we can be sure that it has been defiled by drainage.

Years ago it was customary to attribute disease to an "unknown something." Putridity or fermentation was, in a vague way, supposed to be associated with disease, but no specific agency was recognized. Now we look for the particular germ, and we thoroughly recognize the pernicious influence of infected water.

A POPULAR REPORT OF THE INTERNATIONAL CONGRESS OF HYGIENE.

[As of interest in connection with our scientific report, we reproduce the following from the correspondent of the *Evening Telegraph*.—Ed.].

Official representatives of some thirty nationalities, including such far-off countries as Japan and Nicaragua, have met in Vienna; and these, together with the delegates of municipalities, sanitary associations, and private persons taking interest in hygiene, made a grand total of close upon 2,500 persons. Never before has the cause of sanitation excited so much interest, and never in the world's history has an international congress of hygiene been held on so grand a scale.

Perhaps the greatest interest centred on the discussion relating to quarantine, where Mr. Shirley Murphy, one of the most devoted among the London medical officers of health, bravely fought for English ideas. He pointed out that the detention of ships in the Suez Canal, as proposed by the French, would only engender a sense of false security, and retard those sanitary reforms which, on all hands, were acknowledged to be the most effective checks to the spread of cholera. Dr. Max von Pettenkofer, the renowned German scientist, strongly supported the English view and paid the highest tribute to English sanitary legislation and practical reform. He pointed out that no country in the world had more constant relations with India, and yet England had been marvellously free from cholera ever since quarantines were abolished and towns more carefully drained. His modest minority of two at The Hague, when he voted against quarantines, became an irresistible majority at Vienna; and the only point remaining in dispute was the advisability of the detention for a few days of ships on which cases of disease had actually occurred. This much in the direction of quarantine was approved by a small majority.

RIVAL SYSTEMS OF DRAINAGE.

It being acknowledged that good sanitation, and notably good drainage, was the best protection against cholera, the debate on the various methods of drainage became exceptionally interesting. Opinions with respect to a separate canalization—that is, the Waring system—were evenly divided. A sewer that receives rain-water must always be much larger than what is wanted for mere domestic purposes; it is, therefore, more difficult to flush satisfactorily. There is more space within for the formation of sewer gases, and the deposits of dirt on either

side are only carried away when there is a storm. If, on the contrary, the rain-water is excluded the volume of sewage proper can be readily calculated, and with automatic flush-tanks arrangements can be made to flush the pipe from top to bottom at least once a day. But the Shone system, when applied as a separate system, has all the advantages of the Waring method, and, further, can be worked where there is an insufficient fall. As a rule, the fall in a sewer is insufficient. It is curious how engineers neglect this point. When drinking-water is supplied to a town great care is taken to lift the water high enough to place it in a reservoir on some elevated summit, so that it may have the full force of gravitation necessary to reach every house and every story. For sewers no such care is taken; yet there are grease and heavy substances, sand, grit, earth, in sewage which makes it much more difficult to move forward than the supply of pure drinking water. The fall, the inclination, or, in other words, the force of gravity in sewers varies infinitely, according to the accidental topography of the locality. The laws of hydraulics, so carefully studied with regard to water supply, are almost universally neglected with respect to Sewers. Anything seems to suffice for a sewer, and the result is that almost every sewer is a nuisance, and our lives are rendered a burden unto us through the constant fear of sewer gas. The Shone system is contrived to meet this very serious grievance. By its adoption the sewers will have the fall necessary, according to their size, to ensure their perfect working. This fall will be given where the ground is absolutely flat; it can be secured even when going up a hill. At some convenient spot, it does not matter how far off, a small, inexpensive steam engine is set to work compress-

ing air. This air is delivered through little iron pipes, like gas pipes, at various points in the town where the sewage has reached its lowest level. Here it accumulates in a small iron apparatus that can contain some 600 gallons. When full a valve opens automatically, and the compressed air rushes in and forces the sewage up vertically to an altitude of five, ten, or twenty feet. It can then continue its course again by gravitation till it again reaches the lowest practical level, and then it is raised once more by another similar apparatus fed by one and the same air-compressing engine. This method is much cheaper than the establishment of a steam pump, and can be placed in every direction under crowded thoroughfares without in any way interfering with the surrounding property.

STREETS AND HOUSES.

Among other practical suggestions thrown out at the Congress, I should mention M. Emile Trelat's most remarkable paper on the lighting of houses, which in America, where so many new towns are built on land that is comparatively cheap, might be carried out. Firstly, he laid down the principle that a house-wall that did not, for at least a short time during the course of the day, receive the direct rays of the sun, was a wall that was rotting and harboring the germs of disease and corruption. Taking the temperate zone, which embraced the principal towns of Europe and North America, and judging from the winter season, when there is the least sun, he concluded that a street running from north to south should measure forty-one yards in width if the houses were twenty yards high. In the contrary sense, from east to west streets become almost impracticable, as they would have to be four times as wide as the houses were high. Dealing with houses as they now

exist, he pointed out that but little benefit was obtained in widening the windows. This increased only the volume of light in the corner of the room nearest to the window where people rarely sat or worked. Light was wanted in the middle and farther end of the room, and this would best be secured by increasing the height of the windows. Light can only enter at an angle of thirty degrees, and the higher our windows go the farther will the light reach within our apartments.

THE CURTAIN NUISANCE.

But then, what science and hygiene demanded, what architects sometimes supplied, conventionality and the ladies entirely destroyed. What is the use of high windows to invite the pure light of heaven if the ladies came with heavy damask curtains and silken drapery to blot it all out? If we must have curtains, then let us reverse the fashion; let the curtains be drawn right back at the top of the window and draped over the lower part. To open the curtain at the bottom of the window and close it at the top is to illuminate our boots and ruin our eyes. It is impossible not to acknowledge the obvious truth of this theory; and its effect can at once be tested in any room supplied with movable curtains. But what a revolution this implies! How different must the education of women become before they can be made to accept this scientific basis of house decoration! I have known English families starve themselves so as to hang clean, well-washed and ample muslin and silk curtains to their front windows. This is just the part of the house which the neighbors opposite, ever ready to pick a hole and make a nasty remark, can see and criticize. It would never do not to have proper curtains, hung in the proper way. It does not so much matter what there may be behind; that is not so generally seen:

but Mother Grundy is merciless with regard to window blinds and curtains. Well might M. Trelat's voice, in spite of all his French gallantry, assume a melancholy tone when he alluded to a possible conflict with the ladies. Every single member of the Congress adopted, applauded, and agreed with M. Trelat's theories. I have not yet heard of one who had the courage to broach the matter at home. In Vienna, the windows all preserve their normal aspect; I have failed to notice that any curtains are fixed upside down. Still, this is a revolution that we must accomplish. The sight of the rising generation is worse than that of its predecessors, and powerful as is the sway of Fashion, it must loose its hold upon the blind.

FESTIVE SIDE OF THE CONGRESS.

By the side of all these serious discussions there were many entertainments and banquets. From the first hour in the morning till late at night the members of the Congress found their time fully occupied. This was intensified by the solemn reception of the entire Congress at Court. The Emperor, unfortunately, was absent; he had been called away to unveil the statue of Deak, at Buda-Pesth, but the Crown Prince received us with much urbanity. The palace of the Hapsburgs was most brilliantly illuminated for the occasion. Some ten thousand candles were required for all the chandeliers of the vast reception-rooms. These were disposed for the most part in rings, commencing with a large ring and going up with smaller rings to the ceiling; so that we had cones of light above us. A splendid supper was provided, at which, however, the crush was absolutely phenomenal. The room for the supper was exceptionally small, and the members of the Congress had to use each other's shoulders as tables. At one moment I

had a plate resting on each of my shoulders. Another person was digging me in the ribs with his plate, while one of my arms was so tightly wedged in the crowd that for some time I could not reach my own plate, which I was holding high up with the other arm. To maintain a courtly deportment in the midst of this struggle was no easy matter.

NO ONE DARED SNEEZE.

Had any one sneezed at this moment, the shock would have sufficed to spill the gravy from a dozen plates. The traditional sardines in a box have a roomy berth when compared with the space occupied by the hungry hygienists who sought to avail themselves of Hapsburg hospitality. Nevertheless, the reception was a brilliant success, and if the crowd was at times oppressive, it was because the doors had been thrown open to all, and every sanitary reformer was made welcome in the palace of one of the oldest reigning dynasties of Europe. It was in 1276 that Rudolph of Hapsburg took Vienna and established the rule of the Hapsburg dynasty, and forthwith the palace where we were received was built. Though the the Hofburg, or Burg, as the palace is called, dates from the thirteenth century, I believe the ball-room where the members of the Congress were entertained by the Crown Prince was built in 1735. Nevertheless, the whole surroundings bore a venerable air of antiquity, which was not a little enlivened by the brilliant uniforms of the officers of the soldiers of the Guard or the gorgeous liveries of the servants. It was, indeed, a cheerful and significant sight to see Prince Rudolph of Hapsburg, the representative of so ancient a monarchy, fraternizing with the leaders of a younger and a democratic science, and acknowledging in his speech that "Man is the most precious capital of the State and of society in general. Every individual life

represents a certain value. To preserve this as intact as possible is not only the command of humanity, but also the duty of every community in its own interest."

QUARANTINE DEFICIENCIES ON
THE DELAWARE.

(THE FOLLOWING EXPLAINS ITSELF.)

COMMONWEALTH OF PENNSYLVANIA,
STATE BOARD OF HEALTH,
EXECUTIVE OFFICE, October 21st, 1887.

TO THE PRESIDENT AND MEMBERS OF THE
BOARD OF HEALTH OF PHILADELPHIA:

Gentlemen:—The recent action of your Honorable Board in sending a Committee to investigate the manner in which the quarantine of the cholera patients and suspects now detained in New York harbor is being administered, cannot be too highly commended. In the presence of so terrible and so insidious a foe, too great vigilance cannot be exercised. Permit me, however, at the risk of seeming pertinacity, again to call your attention to the entire inadequacy of the provisions made by the State authorities for coping with a similar emergency in our own port.

Your Committee may have found laxity in the enforcement of quarantine regulations in New York harbor. It is sincerely to be hoped that their visit will have had the effect of inducing greater efficiency in this respect. But they could not have failed to be impressed with the fact that, in everything which constitutes a possibility for maintaining an efficient quarantine, the New York station is immeasurably superior to our own at the "Lazaretto." Its isolated position, separated by a broad expanse of salt water from the neighboring shores, its extent of area, its hospital and barrack accommodations and its machinery for disinfection, all belong to the sanitary *regime* of to-day; while ours

are those of nearly a century ago, when the present metropolis of Pennsylvania was but a country town. What might have been the consequences to her teeming population had the ship "Alesia" ascended the Delaware river to Chester instead of anchoring off Sandy Hook, it is not pleasant to contemplate.

The persistence of the cholera pest along the shores of the Mediterranean for so long a period, now measured by years, and its increasing malignity at certain points at the present time, make this a most urgent question, only emphasized by the actual transportation of the disease across the Atlantic to a neighboring port. Our turn may come next, and very soon. Cholera is no respecter of seasons, and we cannot rely upon the frost to confer immunity from its invasion as we may in the case of yellow fever. Cholera at Tinicum would mean cholera in the neighboring country and cholera in Philadelphia, just as yellow fever at Tinicum meant yellow fever in the neighboring country and yellow fever in Philadelphia, on the occasion of its last visitation.

It is wiser to admit this fact at once, and take the necessary steps to keep it at a safe distance, rather than to wait until it has gained a foot-hold, and then attempt the desperate work of its expulsion. To this end, concert of action on the part of the three States bordering on the Delaware river and of the general Government, will be essential. In any such movement you can rely upon the cordial co-operation and support of this Board. The immense interests at stake, as regards both life and property, in this city, however, would seem to make it expedient and appropriate that her authorities should take the initiative.

Earnestly bespeaking for this important subject the attentive consideration of your honorable Board, I am,

Yours respectfully,

BENJ. LEE, Sec'y.

DISINFECTION. *

BY DR. L. LOFFLER,

Professor of Hygiene at the Berlin University.

The following are the requisites for disinfection.

1. Great cleanliness of the individual, the people about him, as well as of his room and its contents.

2. Thorough and frequent change of air in the sick room.

3. The immediate removal of all noxious articles and such substances as are likely to produce infection.

To render harmless articles exposed to infection they must be subjected to steam or immersed in boiling water for half an hour or subjected to the influence of a solution of carbolic acid, one part of the acid to eighteen parts of water. The linen, bed-clothing and all such articles should be burnt. Such articles as are not destroyed should, at the termination of the illness be placed (without shaking the dust from them) in a solution of carbolic acid, one part to nine of water, and there allowed to remain for twenty-four hours, when they should be boiled for half an hour and washed in soap-lye, using half an ounce of the lye to twenty pints of water.

All the evacuations and discharges from Cholera, Typhoid Fever, Diphtheria, Scarlet Fever or Dysentery must be received in vessels one-fourth filled with a solution of carbolic acid and they should be immediately removed. No one should eat in the sick room save the patient. Bad odors must be avoided by removing the causes, *i. e.* evacuations, soiled bandages and by frequently renewing the air. Fumigations by odorous substances do not disinfect; they only conceal bad smells

* Abstract of address before the International Congress of Hygiene at Vienna—Specially reported for THE ANNALS OF HYGIENE, by Dr. Pins.

but do not remove the infection. After convalescence all articles should be removed to the disinfecting station, wrapped in sheets that have been saturated with a two per cent. solution of carbolic acid.

Leather articles (boots and shoes, etc.) are to be washed with a five per cent. solution of carbolic acid. Polished and carved furniture, pictures with frames, metallic articles and works of art are to be well rubbed with dry linen after the floor of the room has been wetted with carbolic acid solution. The sick room should be thoroughly aired for twenty-four hours. The use of public vehicles, omnibuses, street-cars, hacks and steam-cars and boats for the conveyance of Cholera, Small Pox, Diphtheria, Scarlet Fever and Measles patients should be forbidden; such patients should be transported in conveyances specially designated for the purpose. Those dying of these diseases should be wrapped in a linen cloth saturated in a solution of carbolic acid, coffined *unwashed*, and buried immediately. All persons coming in contact with such patients, should, before they mingle with other persons, wash their hands, faces, hair and beard thoroughly in a two per cent. solution of carbolic acid.

POISONED CHEESE.

ED. ANNALS OF HYGIENE:

I send you to-day a sample taken from the same cheese that has poisoned a family of five, in this town. The illness started with pain in stomach and vomiting. But in this same family the wife took from the same cheese, and did not take sick.

Another family of five all took sick that ate cheese. Four or more other persons that ate cheese were taken with violent pain in stomach. The principal

symptoms of the families attended by me were pain in stomach, with vomiting, cold perspiration and weak pulse. A few hours later some were taken with diarrhoea. F. D. RAKER, M. D.

Shamokin, Pa.

This cheese was sent to Dr. L. Wolff, Demonstrator of Chemistry in the Jefferson Medical College, who thus reports:

October 31st, 1887.

DR. J. F. EDWARDS:

Dear Sir:—I have the honor to submit below a report on the examination of the specimen of cheese you handed to me.

The color and odor seemed to be that of normal cheese, but many of the porosities were filled with a grayish green fungoid growth (*aspergillus glamus*). Examination with a magnifying lens revealed the condition of the parts adjacent to the pores to be of a more friable nature and less homogeneous than the rest. From the letter of your correspondent I infer that the cheese acted as a gastrointestinal irritant, either directly or indirectly. The former of these effects would be due to a metallic or mineral irritant poison.

To test this, a portion of the cheese was incinerated and the ashes tested in the customary manner for copper and lead with negative results. Another portion of the cheese, disintegrated with distilled water, was tried by Reinsch's test for mercury, antimony and arsenic, to all of which it failed to respond. Absence of arsenic and antimony were also established by negative results with Marsh's test.

The above experiments would effectually dispose of any supposed admixture to the cheese of foreign poisonous material.

The presence of the cheese poison, recently discovered by Prof. Vaughan, and by him termed "tyrotoxicon," and found

chemically to be "diazobenzol-butyrate," was thus to be suspected.

To this end a considerable portion (250 grammes) of the cheese was rubbed up with distilled water, and the latter filtered off. The watery extract so obtained was neutralized with sodium carbonate, and then shaken with half its volume of pure ether. The residuum after the evaporation of the ether was a small quantity of liquid, of which a few drops added to a mixture of pure sulphuric acid and carbolic acid produced a yellow color, ripening into orange (preliminary test for diazobenzole). As this alone, however, would not suffice to establish definitely the presence of tyrotoxicon (the same play of colors being produced by nitrates and nitrites), and as the short time allowed for rendering this report would not admit of the more tedious process of purification of that substance, the chemical test was supplemented by physiological experiment. A few drops of the liquid placed on the tongue of a young kitten produced prompt emesis and numerous watery dejections with evident depression and malaise of the animal. A larger cat was similarly affected by it, though the depression and malaise was not as marked nor as long continued. While, according to the discoverer of the "tyrotoxicon," nothing but a distinct diazobenzol reaction will chemically establish its identity, the rough chemical test, confirmed by the physiological experiment, leaves no doubt as to the nature of the poison.

I, therefore, respectfully report that the specimen of cheese you furnished to me contained the "tyrotoxicon" of Vaughan, which he has shown to be "Diazobenzol-butyrate."

That this may have resulted in the manufacture of the cheese from the employment of milk, or casein which had

partly decomposed or undergone butyric fermentation is possible, but in my opinion the poison was probably developed after the cheese was made, likely by its being kept in a close place, locker or chest, where the germs of lacteous decomposition were present.

As to suggestions for the avoidance of its occurrence and development, I think I can sum them up in a few words: Absolute cleanliness of all closets, lockers or receptacles for dairy products.

Very respectfully,

L. WOLFF, M. D.,

Demonstrator of Chemistry, Jefferson Medical College.

BOATING AS AN EXERCISE FOR WOMEN.

Feminine interest at the boating season is displayed by bright colored ribbons worn in favor of a particular college crew (says the *Boston Journal*) by sympathetic attendance at races and by enthusiasm over the victors. Yet, active part in boating is healthful and strengthening, when rowing is done in moderation and carefulness. It broadens the chest, strengthens the muscles of the back and arms and gives vigor to the system. The vigorous crews at Wellesley College illustrate the enthusiasm which it inspires and show the effective work that can be performed by young women in earnest at the oar. The canoeing, which is now the fashion, induces instruction in the art of sculling, and nothing is more graceful than to see a young girl sending a light canoe through the water with quick, energetic strokes. In the first place the young oarswoman wears an appropriate costume of loose blouse waist and flannel round skirt; she then secures a light boat, and is careful to obtain in the beginning the art of the best position and movements. With a short practice she is able to achieve success in propelling the boat rapidly through the water and soon attains strength for a long pull and a strong one.

COMPLIMENTARY SAMPLES.

For purifying the atmosphere of the sick-room, for deodorizing and disinfecting the discharges from the sick, for combating contagion, as an antiseptic in the lying-in-chamber, and as a general disinfectant for all household purposes, PLATT'S CHLORIDES is now recognized as the standard preparation; and through the kindly interest of the Medical Profession, coupled with its proven merit, has become established in large demand.

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Yours truly, **HENRY B. PLATT, 36 Platt St., New York.**

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Editorial.

OPEN SPACES IN CITIES.

One of our subscribers in this city writes to us calling attention to the censurable want of foresight displayed by our authorities in failing to provide reservations in various parts of the city for parks. This is a serious oversight, and the attention not only of our own authorities, but of those of every city in the land should be earnestly directed to this question.

Such parks are, so to speak, the lungs of a city; in their purer atmosphere, the fouler air of the more densely populated districts has a chance to be, to a certain extent, purified, while such open spaces afford opportunities for recreation in the sunshine that are of intense value. This matter should be carefully considered by the proper authorities everywhere.

THE INTERNATIONAL CONGRESS OF HYGIENE.

The report of the International Congress of Hygiene which we publish in this issue is, in itself, independently of the discussions and deliberations it reproduces, a valuable lesson in Hygiene. We know that to "make haste slowly" is a valuable sanitary maxim, and we find that when we look over the subjects discussed and reflect that one whole week was consumed in their consideration, we are prepared to believe that no small amount of the time of this Congress was given to life renewing recreation and that its members well realized that close, confining, prolonged, crowded work was not in keeping with the doctrines they were teaching. While we are drawing inspiration from the written words of these great men, let us also derive wisdom from their unrecorded example and realize that the best way to accomplish most is by the judicious admixture of recreation and work and that it is not he who runs the fastest, or works the hardest, who covers the most ground or accomplishes the most work in the long run.

THREE STRAWS.

We desire to call attention to three straws that unequivocally demonstrate the direction of the wind of popular sentiment.

Straw No. 1.—The International Congress of Hygiene at Vienna was attended by *more than three thousand persons*. Straw No. 2.—Dr. Da Costa tells us, in his introductory lecture at the Jefferson Medical College, that "The physician in the *times near at hand* will be a very decided sanitarian. Straw No. 3.—The lecture by Dr. Penrose, introductory to the medical course at the University of Pennsylvania, was practically a discourse

on the hygiene of young girls, and a most masterly and finished address it was.

Here we have the spectacle of the two great medical schools of the country welcoming the reassembling of their classes by impressing upon them the prime importance of preventive medicine, while a few short years ago the stereotyped introductory lectures always referred to the progress of *curative* medicine. Still another straw may be noted in the fact that the address to the graduating class of the Jefferson Medical College, last spring, by the eloquent Professor Holland, was a discourse on hygiene.

These facts all demonstrate in an undeniable manner that the tendency of popular sentiment has turned strongly and rapidly towards hygiene. The profession is alive, and rapidly growing more so, to its importance, and when their co-operation is thoroughly enlisted the sentiment of the people, who look to us for guidance in such matters, will be in the right direction. Those who say that hygiene is not popular, and despair of success for those who are laboring for sanitary reform, certainly fail to read correctly the signs of the times. When we have completed the rapidly growing enlistment of professional sympathy, we will find the people ready and anxious to receive the information that will be imparted, and to act upon it. He who reflects upon the marvellous and unprecedented progress of hygiene in the past *very few years* cannot help but feel a confident assurance of the future.

BUTTERINE IN ENGLAND.

Butterine, as it is called in England, is used so extensively that the dairymen have applied to Parliament for a law compelling its name to be changed from butterine to margarine. They think they can head it off in that way.

Notes and Comments.

HOW TO TELL PURE WATER.

In the report on "The water supply of Michigan," some valuable hints are given to test the purity of the water. These tests are so simple that any one can use them. The report says that because we cannot recognize a bad smell or taste, it is far from being a safe criterion of good water. Some people are more acute than others in the use of their senses. Evil effects on the health are the same, whether the impurity of the water is perceptible or not. Heisch's test for sewage contamination is as follows: "Fill a clean pint bottle three-fourths full with the water to be tested, and in this dissolve half a teaspoonful of the purest sugar, cork the bottle and put it in a warm place for two days. If in twenty-four to forty-eight hours the water becomes cloudy or milky it is unfit for use. If it remains perfectly clear it is probably safe to use it."

The color, odor, taste and purity of water can be ascertained as follows:

Color.—Fill a large bottle made of colorless glass with water, look through the water at some black object.

Odor.—Pour out some of the water and leave the bottle half full; cork the bottle and place it for a few hours in a warm place; shake up the water, remove the cork, and critically smell the air contained in the bottle. If it has any smell, particularly if the odor is repulsive, the water should not be used for domestic purposes. By heating the water an odor is evolved that would not otherwise appear.

Taste.—Water fresh from the well is usually tasteless, even if it contains a large amount of putrescible organic matter. All water for domestic purposes should be

perfectly tasteless, and remain so even after it has been warmed, since warming often develops a taste in water which is tasteless when cold.

“THAT GIRL OF YOURS.”

“That Girl of Yours, or the Choice of a Wife,” was the subject handled recently by the Rev. C. H. Woolston, of this city, before his congregation. “Be ye not unequally yoked together with unbelievers,” from II Corinthians vi, 14, was the text.

“Let the rich marry the poor,” said the pastor. “Then there will be more money in circulation. I also say let the beautiful marry the ugly, and in the same manner we’ll have more beauty in circulation. Never marry those morally unfit. Of this class there are many; also I say to the highly accomplished young lady, don’t marry the bald head spiritualistic medium; don’t be unequally yoked.

“Another thing to be looked into is the disposition of ‘your girl.’ I tell you, much of the drunkenness of the present day results from domestic troubles. You hear a splash in the dark waters of the river, you fish out out a poor wretch. What’s the matter? Books all correct; bank account all right. Ah! you find the reason of the suicide in marriage infelicities.

“Our asylums are full of inmates driven there by domestic troubles, the results of unhappy marriages. All these are unequally yoked; the dispositions were not studied before marriage and unhappiness afterwards naturally results.

“A great many marriages to-day are made on a dime novel basis by readers of this style of literature, who become imbued with the idea that life is a round of flirting, a glitter of diamonds and flash of style. Dreadful awakenings result. Now, don’t marry a girl with a white-heat

temper, especially if you have one of the same kind. If you both get mad at once there’ll be an earthquake. A storm, blizzard or hurricane are as nothing compared to a woman with a white-heat temper, unless you can take it cool. Don’t marry an ignorant girl. You can’t afford to marry sawdust. If you are not blessed with much brains, why, marry some.

“By all means avoid a butterfly-giddy woman, for she is a thing. I saw one on the beach the other day kiss a dog. I pitied the dog. Look out for an intelligent young woman, even if she be poor; one who schools herself to life work in store or shop and makes up deficiencies by night study. I want to compliment the factory girls, that much abused class. There are some of the sweetest, finest and most lovely girls among them that ever walked these streets, and rich, indeed, is the young man who obtains one of these thrifty women, who is calculated to make him happy and be a help in the struggle of life.

“This world is full of lovely girls and a man can easily select one as a helpmeet through life. A real true beauty is one whose goodness looks out through her eyes and whose deeds speak good and whose life and character is without blemish. The way to gain such a woman is to be worthy of her.”

THE LATE DR. S. D. GROSS WAS
“CONSTITUTIONALLY LAZY.”

The sons of the late Professor Samuel D. Gross have issued the autobiography of their distinguished father, from which we note the following:

“The Doctor was ‘constitutionally lazy,’ and he is not sure that indolence is not the normal condition of our nature. The man who wishes to live well or long should never rob himself of his rest at night. ‘Even if he can not sleep

it is a great comfort to be able to stretch himself out upon his bed to relax his wearied muscles and his excited brain.' But 'the grave is the only place where a man bent upon the performance of good deeds should seek repose.' 'Why don't you sometimes rest?' said a friend to Arnauld. 'Rest! Why should I rest here? Haven't I eternity to rest in?'

"People should be regular at their meals. 'My breakfast has always been served for the last forty years at eight o'clock, summer and winter; my dinner at 2.30 and my tea at 7.30, generally with the regularity of the clock.' Late suppers he always avoided, and never drank wine, brandy or whisky until after he was twenty-five years of age. 'Even now I have a great aversion to all alcoholic drinks, except now and then a glass of hot whisky punch on a cold night, immediately before going to bed. The only wine I have really ever had a fondness for is champagne.' He advocates the public use of Sauterne and Rhenish wines, was occasionally refreshed by a glass of Scotch ale, which he recommends for dyspepsia, asthma and inordinate insomnia, but believes that superior champagne, 'a drink fit for the gods,' is one of 'the very best, as well as one of the most grateful, remedies in disorders of the digestive organs, whether acute or chronic, attended with flatulence, nausea, or vomiting.'

"He declares that the inordinate use of coffee is productive of a great deal of irritability of temper, indigestion and loss of sleep; that black tea is preferable to green, and that a cup of it is far better in relieving fatigue and preserving strength than a glass of wine, whisky or brandy. As for the vegetarians, they are utterly at variance with the principles of sound sense and the laws of our being. 'If a man wants to be well,

happy, cheerful and comfortable, in the best possible condition for his day's work and night's rest, as it respects his brain and muscles, he must eat slowly, masticate his food thoroughly, and not crowd his stomach. This organ can bear a great deal, but there is a point beyond which endurance is impossible.' Persons naturally weak, the aged, the infirm and the overworked, will be benefited by a glass of generous wine, or a little whisky, brandy or ale, at dinner. And finally, as a general rule, whatever the stomach craves may be accepted as an indication as to what is wholesome."

There is nothing surprisingly new in all this advice, but remember we are getting it gratis from a man who could have charged us \$1,000 for it.

DA COSTA ON HYGIENE.

In the course of his introductory lecture to the students of the Jefferson Medical College, Professor J. M. Da Costa made use (*Medical Times*) of the following significant language:

"The physician in the times near at hand will be a very decided sanitarian. As it is, we are all sensible of the growing importance of hygiene. We know the value of sunshine, of fresh air, of open spaces, of pure water, of wholesome food, of appropriate dress, of cleanliness, of effective drainage, of thorough disinfection. We appreciate the use of innocent recreation. We feel the necessity of saving young lives from premature exhaustion by the drain on their unformed powers from overwork, especially from the senseless cramming into jaded brains of useless knowledge. We take heed of the exercise that soothes and refreshes, that fits mind as well as body for better purpose, and of the excessive devotion to it which injures both.

"But we have still the task before us of making people generally understand all this; and at the task we must go with the aggressiveness of decided conviction. No faint words; no half-measures. Ignorance, cupidity, the obstructive, terrible force of inertia, must be made to feel that they have a deadly enemy at work in every member of our profession. Do you think it unnecessary to be so active? Listen to the report of a Committee to the American Public Health Association a few years since.* Of the whole number of deaths in the United States as ascertained by the census of 1880, not less than 200,000, or considerably more than one-fourth of them, were due epidemic diseases. Measured by the known results in places exempted, energetic means for their prevention, from the prevalence of epidemic diseases, if these means had been made general throughout the United States, 100,000 of the sacrificed host would probably have been saved. Listen also to these ghastly statistics taken from the recent writings of an eminent sanitarian.† They are more particularly concerned with childhood. 'Children under five years of age,' we are told, 'are expected to die in what may almost be a definite proportion.' Examining different countries, we find that of ten children born in Norway, only a little over seven attain their twentieth year; in England and the United States of America, somewhat less than seven; in France, only five reach it; and in Ireland, less than five. What a record when we take into account that most of the diseases of childhood are preventable diseases, and that with a just hygiene they would be reduced to insignificant proportions.

*A. N. Bell. "Public Health Papers and Reports," Vol. X., 1885.

†B. W. Richardson. *The Commonweal*, 1887. "Essay on the Seed-time of Health."

"But we need not despair of effecting much by sanitary means properly used. Let us look at results already accomplished by means as yet far from perfect. I will quote, as concerning us all most closely, some of the results obtained in our own country. In Michigan the saving of life from scarlet fever alone has amounted in the last eleven years to 3,718. In Memphis, the drainage of which was some years ago in the worst possible condition, the death rate has been reduced in six years from 35 in a thousand to 23.80 in a thousand; in Chicago, in the last five years, from 25.69 in a thousand to 19.46, a saving of 17,214 lives in that city during this period.‡ If then already something is being done, how much more can be done by persistent and united effort. The medicine in the near present will be as largely a medicine of prevention as a medicine of cure. Let us trust that it will be even more so. Let us go on in our noble endeavors to be efficient preventers as well as efficient curers of disease. Let us go on with courage and devotion in the self-imposed task of teaching how to lengthen life and to add blessings to it. Let us go on with increased power presenting the splendid spectacle of a profession, earnestly and in its loftiness, striking at its own existence, and, for the common good, endeavoring with all its might to immolate itself."

BEGINNING THE DAY.

A writer in the *New York Sun* gives the following sensible suggestions: "When you get up in the morning take a big drink of water. Your system wants water first. An engine isn't first fired up and then some water let into the boiler. Clean your teeth and let the water run from the spigot while you're doing it.

‡Rohé. Address in State Medicine before the American Medical Association, Chicago, 1887.

Then drink a pint of it. Use common hydrant water; no ice, no salt, no mineral water. Ordinary water is good enough for an ordinarily healthy man. Keep away from drugs and pills and give your stomach a show.

"If you're in a hurry to read the papers, read them before breakfast. When you sit down to the breakfast table be happy; you're going to do something pleasant. Breakfast isn't a penalty imposed upon you, or a task to be performed as soon as possible, but a pleasant, enjoyable occasion. Try and have somebody talk to you, and talk yourself. Laugh. Start off with fruit. Then eat some fish and stale bread, or stale rolls or toast. If you want anything more, eat some meat. Take your time to it all. I stay at the table for an hour, and eat all the time. Don't eat much, but take your time to it. If you haven't time, eat less. The time you spend at breakfast will be saved over and over again during the day.

"If you have been up the night before, don't take a cocktail or ice water. Try some broth and some tripe if your stomach's pretty far gone. When a man's been off a little his stomach is raw and inflamed. He doesn't want to start right off with more rum. Let him give his stomach a show. It'll pay him to. Coddle your stomach in the morning and it'll stand up for you at night. If you go pitching into it the first thing it will have its revenge.

"Don't smoke in the morning. Don't drink in the morning. If you must smoke and you must drink, wait until your stomach is through with breakfast. Try this thing of starting off fair and square. You can drink more and smoke more in the evening and it won't tell on it. A man's stomach is his friend, and if he'll only treat it kindly the first half of the day it will show its appreciation and stick by him at night."

ANIMALS AS CARRIERS OF DISEASE GERMS.

Dr. S. E. Earp thus writes in the *St. Louis Courier of Medicine*: "There can be no doubt that the various pets of children are not infrequently a means by which the disease germs are carried from one house to another. In some instances where pet rabbits, kittens and lap dogs have been constantly fondled by the little patients, I think I have traced the source of contagion. In this manner, almost unawares, the epidemic may spread rapidly. Furthermore, it is apparently quite possible that the animal itself may be susceptible to the disease. In a clipping in the *St. Louis Courier of Medicine* of July, 1887, taken from the *British Medical Journal* of May 7th, 1887, O. Bourn reports a case of whooping-cough in a cat, as related by the mother of a child also affected at that time; also that this is the first instance where the disease was transmitted from man to animal. In 1864 my father and one other member of our family were attacked with this disease, and during the time a large house cat was frequently asphyxiated by attacks of coughing; at times, when long continued, there was a peculiar noise which, it was thought, very much resembled what my father called a 'whoop.'

"In October, 1886, I was treating a family in this city, where there existed three cases of diphtheria in small children. The baby, a child eighteen months old, kept almost constantly at its side a pet poll-parrot; in fact, oftentimes the parrot would take sweetmeats from the mouth of the baby. At a latter date the feathers of the parrot began to drop; it seemed to lose its activity, it coughed frequently, its mouth was filled with a glairy mucus. During health it was a superb linguist; its voice now became hoarse and eventually lost. Upon examination, the throat

presented a well-developed membrane. A few days ended the life of the bird. The children had been using the spray of corrosive sublimate, and this was adopted with the bird, but proved a failure.

"With these instances mentioned, which seem very much as if infectious diseases would, in some instances, attack the lower animals, too much care cannot be given to this method of spreading the contagion. While at first thought these may be trivial matters, yet reflection will undoubtedly demonstrate the necessity of proper precaution under all similar circumstances."

GARRETT'S MENTAL STRAIN.

That the Baltimore millionaire and ex-railroad president has not been a practical believer in hygiene is evidenced by the remarks of his confidant, Dr. Barnard, who says: "For more than two years past it has been no secret among Mr. Garrett's friends that he was recklessly abusing his remarkably vigorous constitution by mental overwork, while he has neglected the physical exercise his sedentary habits demanded in order to maintain a fair equilibrium between the physical and mental systems. I do not know of any man who possesses a finer physique or better health than Mr. Garrett enjoys to-day. But he inherits from his father the characteristic of large blood-vessels in the head, and in moments of undue mental excitement, or as the result of prolonged mental application, there is inevitably an undue determination of blood to the head, which has long been the subject of grave concern to his family and intimate friends. For some days before his departure for the other side in July last he labored under excitement, the direct result of overwork and consequent inability to sleep. He has always been an early riser and worker, and even when apparently bent on social

pleasures has usually a business object in view, on which his mind dwells persistently. This is a phase of character very familiar to his associates, but it has also given his brain little rest, and I am told was pointedly observed on the other side this past summer. Be that as it may, the effects of the wear and tear which he had been subjected to while there were so marked in Mr. Garrett's manner and appearance, apparent to his familiars, on his landing, that they felt it necessary to closely observe his movements and as far as possible to keep him from the great excitement incident to the sudden sale of the Baltimore and Ohio Telegraph and the curiosity of friends and enemies to obtain his views of the situation. A portion of the press has been very cruel and inconsiderate in persistently misinterpreting these precautions and distorting his casual and unpremeditated expressions to personal friends into evidences of mental aberration. The facts are that Mr. Garrett's family and friends have been only solicitous to protect him from an attack of congestion of the brain or brain fever, of which he has been in imminent peril for some time."

THE SMALL-POX IN BROOKLYN; DEFECTIVE ISOLATION AND DEFECTIVE VACCINATION.

Before the New York State Medical Association (*Med. Record*), Dr. N. L. North said that the late epidemic of small-pox in Brooklyn, extending over a period of more than a year, had started from one concealed case in the person of a Polish immigrant who had landed at Castle Garden. He did not criticise the system of vaccination and isolation, as practiced in Brooklyn, because it was necessarily worse than others, but simply because he knew more about it. He spoke more particularly of the interference

of politicians with sanitary matters. He suggested the passage of more definite laws giving power to the health officers to control patients suffering from contagious diseases, as well as the more rigid carrying out of the laws and ordinances already in force. He looked upon the small-pox hospital as a remnant of barbarism, and believed that there could be isolation without removal. He urged the employment of good nurses and good physicians who could take care of their patients and treat them rationally, and not leave them to live or to die as the case might be. The records showed that a greater proportion died of those sent to the hospital than of those who remained concealed at home.

It was a popular belief that many were sent to the hospital who had not the disease, but contracted it there. It was no wonder, therefore, that the friends tried to conceal their sick from the health officers. In closing, the speaker referred to the necessity of thorough vaccination, and the importance of using only fresh and pure vaccine.

"WEAR AND WORRY" KILLED DR. BAIRD.

Commenting on the recent death of Dr. Spencer F. Baird, of the Smithsonian Institution, the Washington correspondent of the *Philadelphia Times* says that he "ought to have had ten years' work still before him and twenty years of life, and would have had if the wear and worry of administrative work had not been thrust upon him. The Smithsonian, with the National Museum hard by, and the allied work of the Fish Commission, to say nothing of the independent work of the Geographical and Geological Survey, has become a very big machine, and a machine of which scientific men are parts. I know a good deal of the management of all

sorts of men, but I would cheerfully assume any task in this direction sooner than superintend the labors of scientific men. Science is great, but scientific men are too often small. Their jealousy is bitter beyond degree, and their anxiety over "priority," credit and early publication, passes the professional anxiety of other men. The Secretary of the Smithsonian, in the development the institution has had in the last ten years, has to manage a swarm of scientific men, struggling, quarreling, intriguing and worrying. Such a part to a man of Secretary Baird's keen sense of justice, high aims, wide knowledge and comprehensive interest in all science, was inconceivably wearing, and it has worn him out."

SCARLET FEVER CONTAGION.

To the cases already on record illustrating the enduring character of the scarlet fever contagion (says the report of the Wisconsin State Board of Health), may be added the following from a village on the line of the St. Paul and Milwaukee Railroad, reported by a physician, a correspondent of this board, a few months ago: Scarlet fever entered a family of three children during the fall of 1885, was reported, and at the end of the cases, two in number, the house was disinfected and some articles of bedding of small value were destroyed. Among the articles used by the patients was a mattress which the people feared would be either spoiled by disinfection, or ordered destroyed by the health officer, and which they thought too valuable to lose. Therefore they concealed it, while disinfecting measures were in progress, and afterward, as they admitted later, "hung it out on a line, except when it rained, for about ten days or a fortnight," and deemed that they had treated it sufficiently in this way. After treatment it was put away, and not

again used until the spring, when it was brought out and given to the third child to sleep upon, *i. e.*, the one who had escaped the fever in the fall. About ten days afterward this child came down with typical scarlet fever, passed through all the stages and made a good recovery. There was no other case of scarlatina in the vicinity and no known exposure in any other way.

YELLOW FEVER AND CHOLERA.

A fine opportunity is now afforded the people of this country, says the *Monthly Bulletin of the Iowa State Board of Health*, for observing the different results of an invasion of an infectious and epidemic disease, in a State where an efficient State Board of Health exists, and in one where the theory is "every man for himself, and the devil catch the hindmost." Cholera appears in New York. It finds an intelligent and well-organized protective host—State and Municipal. Yellow fever appears at Tampa, Florida—a State that refuses to have a State Board of Health, and has no systematic prevention.

In the former case—at New York—no alarm is occasioned. Business interests are not paralysed, life is but little if any jeopardized. In Florida, on the contrary, people are panic stricken, and are fleeing in all directions, and as a legitimate result, thousands of people who have been looking southward will hesitate before leaving their northern homes for Florida. The future developments in both cases are and will be watched with intense interest. The greater danger is from cholera, since the approach of winter exerts but little influence over it, while yellow fever is proverbially limited by early and severe frosts, to say nothing of winter.

THE USE AND ABUSE OF THE BRAIN.

In the course of an address on this subject, Dr. Wm. A. Hammond, of New York, recently said: "Anxiety causes more brain disorders than any other agency I know of unless it be love. Many jokes are made about the gray matter of the brain," said Dr. Hammond, "but I will say right here that I have a great respect for the gray matter of the brain. There is no higher organism than that. It is the grandest organ in man, and were I ever to worship anything, it would be a portion of the gray matter of the brain. It is well for us to know that the emotions cause more unhappiness and crime than any other function of the brain. Human beings are governed by their emotions, and it is well that they should be, though it is the emotions that wear away the brain, and not honest intellectual work. Very few people suffer from intellectual work, and if my memory serves me I do not recollect ever having a mathematician for a patient. It is not intellectual work that causes nervous dyspepsia, but the emotions, such as anxiety, fear, sorrow and love. I consider that eight hours are sufficient for a man to use his brain, because if he exceeds that time he becomes nervous and fretful, and an exhausted brain is an irritable brain. You may not feel the evil effects of the stress of brain work at the time, but you will sooner or later, when it is too late. The men that work at night with their brains are the ones that expose themselves to danger and death, which will surely come unless the great strain on the mind is lightened."

THE SANITARY CONDITION OF RICHMOND, IND.

From the Health Officer's Report
(kindly sent to us by Dr. T. H. Davis)

we learn that diphtheria and scarlet fever have been very prevalent in that city during the past year; 205 cases with 43 deaths of the former, and 140 cases with 8 deaths of the latter. We are pleased to note that a house-to-house inspection is about to be ordered. A most potent factor in sanitation would be regular annual or semi-annual house-to-house inspections, and they should be encouraged in all localities. The water supply is reported good. The birth rate for the year exceeded the death rate by 85. The death rate was 18 per 1000. Speaking of the prevalence of diphtheria, the health officer says:

"Every proper measure has been taken to limit its ravages. Public funerals have been forbidden. No child from an infected house has been permitted to attend school, houses where the disease has occurred have been disinfected, and at this date only an occasional case is reported. While the sanitary authorities can do much toward preventing the spread of diphtheria, scarlet fever and kindred diseases, yet, to be effective, requires the full, free and intelligent co-operation of every person having any connection with the disease. Public sentiment will have to change somewhat before perfect isolation of the patient, and effective quarantine can be enforced without a sanitary police equal in number to the cases reported. When an epidemic is announced and the people stand aghast; then the true value of sanitary measures is realized."

A PRACTICAL AND SUCCESSFUL MODE OF DISINFECTING THE ROOM IN CASE OF CANCER.

Dr. H. Gerould, of Cleveland, Ohio, thus writes: "From September, 1886, until March, 1887, I had in my house, and under my daily care, a case of uterine cancer. To counteract the offensive odor of this dreaded disease, I made repeated experiments with the prominent disinfectants. The following proved to be all

that I could desire, viz: Three drachms of potassæ nitræ dissolved in eight ounces of Platt's chlorides, full strength. In this I saturated thin muslin (cheese cloth), then dried it thoroughly. When necessary to cleanse or purify the room, I would burn small strips of the cloth on a shovel in different parts of the room and under the bedclothing. The effect was magical. Almost instantly all offensive odors disappeared. This was repeated when necessary. (The nitrate of potash was used to aid combustion.)

"The result was such that no discomfort was experienced by the attendants, and no offensive odor could be detected in the adjoining rooms; this was daily remarked by friends. The undertaker said it was the first case of death from cancer where he could detect no trace of the disease.

"This method of disinfection would be equally efficient in all contagious, pestilential of infectious diseases."

THE CONTAGION OF LEPROSY.

From the Tenth Report of the Wisconsin State Board of Health we learn that Dr. Graff, who has seen much of leprosy in Norway, stated that according to the best judgment he could form, the contagion of the disease was less potent than that of tuberculosis; that in the leper hospitals of Norway the contraction of the malady by the nurses or attendants was an unknown thing, notwithstanding the fact that these persons were in close contact with the patient sometimes for many years; strict cleanliness and other equally simple and ordinary matters of precaution were enjoined, but nothing more, and the doctor thought that even though a few cases of leprosy should develop in Wisconsin, there need be no fear of any general extension of the

disease, provided its subjects were reasonably well cared for, made to lead cleanly and well-ordered lives, and kept from coming into too close personal relations with other persons.

AN AWFUL POSSIBILITY.

In these days of artificial teeth, borrowed hair, bustles and other accessories belonging to the mysteries of the toilet, not to mention the laying on of powder and pigments, one is not altogether startled by the announcement of a London firm which proposes to mould the form of woman to almost any degree. What with the "make-up" and "get up" of the gentle sex, and the numerous so-called aids to female loveliness now in use, it is indeed hard to tell whether we are to believe our eyes or not.

What are we to think of a corset possessing such power that "words cannot describe its effects on the thinnest or other bust. Soft patent "regulators," we are told, delightfully comfortable, laced more or less closely, regulate any desired fullness and roundness of "ideal" beauty, so exquisitely perfect and natural as to defy detection. We are further informed "thousands have worn it—with perfect secrecy—some years, and will never wear any other." This is terrible!—*Modern Society*.

A NEW DISINFECTANT FROM COAL OIL.

We read in *Le Monde Pharmaceutique* that a new disinfectant of great energy has been introduced in Paris. It is a brown liquid of syrupy consistence. Water is turned milky by a small addition and the odor imparted is not disagreeable.

An examination of the product justifies the supposition that it is a peculiar saponification of coal oil by caustic soda.

It is especially adapted for disinfecting localities where epidemics rage.

It cures skin diseases in animals and gives luster to the hair.

It destroys moss and fungus on trees and plants.

By sponging a horse with a solution (100 grams in 10 liters of water) flies are kept off.

THE HEALTH OF THE ARMY.

From the annual report of Surgeon-General Moore we learn that the admission rate per 1000 to the sick report during the year was 1.263, as against 1.367 for the previous year and 1.672 for the preceding decade. The rate of constant non-effectiveness was also lower, this year being 39.4, while that for the previous year was 41.1, and for the preceding decade 44 per 1000 of mean strength. The average loss of time for each man in the army during the year was fourteen days, as against fifteen for 1885 and sixteen for the preceding decade.

The death rate was 8.8 per 1000, being higher than that for 1885, which was 6.9, an exceptionally lower figure, but it was, however, considerably lower than for the preceding decade, which was 11.4. The rate of discharges for disability was 24.9 per 1000, against 28.5 for 1885, and 32.2 for the preceding decade.

APPLE DUMPLINGS AND OYSTERS.

There is a good deal to be said in favor of vegetarianism (says a writer in *London Truth*), just as there is for temperance or rational dress, or Sunday observance. But it is the misfortune of all these excellent notions to be championed by persons who carry them to ridiculous extremes or support them by extravagant arguments. Mr. A. F. Hills,

who presided at a vegetarian demonstration at Shoreditch the other day, gave an illustration of this by protesting that vegetarianism is "based upon the bed-rock of science and on the Divine law of love." I know very little about science, and still less about theology, but if either of them says that it is right to eat apple dumplings, and wrong to eat oysters, reasonable beings had better find some other principles to regulate their diet by.

INCREASE OF BLINDNESS IN THE UNITED STATES.

Dr. Lucien Howe read a paper on this subject, says the *Med. Record*, at the last meeting of the American Association for the Advancement of Science, in which he said that while the population, during the ten years from 1870 to 1880, increased at the rate of thirty per cent., blindness during the same time increased one hundred and forty per cent. The statistics also show that blindness increased in an almost constant ratio from north to south in the United States, and that it decreased in the same way from east to west. The cost of sustaining this army of more than fifty thousand blind, if estimated on the lowest basis of cost and wages which should have been earned, amounted to more than \$16,000,000 in 1880, or more than \$25,000,000 in 1887. Contagion and immigration were among the chief causes of this increase.

WILL CARLETON'S HEALTH.

In the course of an interesting sketch of this famous poet, published in the *Philadelphia Press* (August 22d), it is related that when a boy he was predisposed to consumption, but living in a sparsely settled district of Michigan, *he was compelled to walk five miles daily through snow and mud to attend school.*

His health wonderfully improved, and he is now described as a tall, vigorous looking man, who believes in outdoor exercise, especially walking; who is fond of rowing, sailing and horseback riding, who uses no stimulants, who is kindly in manner yet decided in character, who honors womanhood and all that is pure and elevating, who is fond of music, playing on several instruments, and who lives in and enjoys such a home as he describes in "City Ballads:"

"A home that rejoices in love's saving leaven,
Comes deliciously nigh to the splendors of
Heaven."

THE SECRET OF PETRIFYING ANIMAL BODIES.

The secret of the method of petrifying human and other bodies, which was discovered by Dr. Massedaglia in the early part of this century, has never been revealed (say the *Med. Record*), and the curiosity of those who are anxious to know it seems unlikely to be gratified at present, at least. When the discoverer died he left a description of the method in a sealed packet to his "lawful heirs," but no lawful heirs have come forward until just recently, though Dr. Massedaglia died more than forty years ago. It is said that immense sums have been offered for the secret, but that the fortunate possessors are in no hurry to share it with anyone else. Some bodies of animals petrified by Dr. Massedaglia himself are, we believe, to be seen in the museum of the University of Padua.

THINKING AND WORKING.

In our present system of education (says *The Popular Science News*), now happily passing away for a better one, we want one man to be always thinking and another to be always working: and we

call the one a gentleman and the other an operative; whereas, the workman ought often to be thinking and the thinker often to be working, and both should be gentlemen in the best sense. As it is we make both ungentle, the one envying, the other despising, the other; and the mass of society is made up of morbid unhealthy thinkers and miserable workers. It is only by labor that thought can be made happy; and the professions should be liberal, and there should be less pride felt in peculiarity of employment, and more in the excellence of achievement.

OUR DARWINIAN BROTHERS.

Dr. Jammes, in a memoir sent to the Academie des Sciences, states that monkeys, unlike other animals, unless it is the human animal, readily acquire the habit of taking morphia. When monkeys live with opium smokers, as they do in Eastern countries, where the habit is more prevalent than elsewhere, and become accustomed to the medicated atmosphere, they acquire a taste for the pipe. One particular monkey, it is said, would wait for his master to lay down his pipe, and would then take it up and smoke what remained. If not allowed to do so for several days it would fall into a state of depression and inactivity, which would disappear as soon as it was allowed to "hit the pipe."—*From the Pall Mall Gazette.*

THE DRAINAGE OF MELBOURNE.

The necessity of maintaining the purity of rivers is beginning to be felt in many places. Steps, for example, are being taken in Melbourne to improve the condition of the Yarra Yarra, which, it seems, is made to receive the whole of the sewage of the city, as well as the refuse of numerous manufactories situated

on the banks of the stream. The *Age* suggests the adoption of a system of drainage similar to that in existence in London; but the *Lancet* hopes that the citizens of Melbourne will exercise foresight sufficient to enable them to avoid the mistakes which Londoners have made in respect of sewage disposal.

CREOLIN, A NEW ANTISEPTIC; CHEAPER THAN CARBOLIC ACID.

The National Druggist calls attention to a new antiseptic called creolin. It is prepared from heavy coal tar oil, and is patented in England. The claim is made that it kills bacilli, bacteria, etc., is very nearly non-poisonous, and cheaper than carbolic acid. Professor Dr. Fröhner, director of the "pharmakologischen Institute der kön. Thierarzneischule" in Berlin, pronounces it the best remedy known for scabies in sheep. Creolin sheep wash is used with perfect safety and excels all other remedies. Experiments are being made to test its efficacy for destroying phylloxera.

INCREDIBLE IGNORANCE.

Three soldiers at Trapani (Italy) were sent to perform disinfecting duty, and were assailed by a mob, who tried to force them to swallow carbolic acid, which they had been sprinkling about the streets and houses. One of the soldiers imbibed the liquid, and soon after died in horrible agony. The other two refused to drink the acid, and were killed.

TALENT AND GENIUS.

In his address of welcome to the fellows of the American Gynecological Society, Dr. Fordyce Barker said:

"I remember to have somewhere met this terse distinction between Talent

and Genius: 'To do easily what others do with difficulty, that is talent. To do what Talent cannot do, that is Genius.'

"Owen Meredith, now Lord Lytton, gave expression, some twenty-five years ago, to the same thought in the following couplet:

"Talk not of Genius baffled. Genius is master of the man.
Genius does what it must, and Talent what it can."

THE INCREASE OF LEPROSY.

According to M. Besnier, a member of the French Academy of Medicine, leprosy, far from disappearing by degrees, is spreading rapidly. Since the extension of the French colonial possessions, soldiers, sailors, traders, and missionaries have fallen victims to it in large numbers. M. Besnier, therefore, exhorts physicians in all countries to study the fell disease, in order to find a means of counteracting its ravages, for it has active focuses of infection in every part of the globe. The malady is transmitted by a bacillus shaped like that found in tuberculosis.

MALIGNANT DISEASES IN BUFFALO.

Deaths from diphtheria and scarlet fever in Buffalo, N. Y. are increasing rapidly and now average three or four daily. The trouble is supposed to be bad water. The city is growing so fast that people have to sink wells and wait for the water pipes to reach them.

TAR-PAINTED FLOORS.

Some months ago the floors of many Austrian garrisons were painted with tar, and the results have proved so uniformly advantageous that the method is becoming greatly extended in its application. The collection of dust in cracks is thus prevented, and a consequent diminution in

irritating diseases of the eye has been noted. Cleanliness of the rooms has been greatly facilitated, and parasites are almost completely excluded. The coating of tar is inexpensive, requires renewal but once a year, and presents but one disadvantage, namely, its sombre color.

EAR-BOXING.

Ear-boxing is criminally wicked or senseless. Medical records already investigated by Dr. Sexton for science show fifty-one cases in which the ear has been injured by blows of the open hand or fist. The nature of the injuries varied considerably. One patient had inflammation of the ear, with suspicion of internal injury, and a running of the ear for twelve years following the blow upon that organ. This patient subsequently died of brain disease. In another case the ear became inflamed and the hearing very much impaired.

CIGARETTES.

If as many cigarettes are made by smokers themselves as by manufacturers—as is probably the case—some 2,400,000,000 of these "wicked little articles" are now consumed yearly in America. That means about 100 for every male inhabitant, or 68 for every man, woman and child in the United States. New York State, Virginia and North Carolina have a monopoly of the manufacture. Some 50,000,000 cigarettes not included in the above figures have also been imported from Europe.

TOO MUCH WATER USED.

It seems strange that we should every now and then hear complaints about extravagance in the use of water, but we do. The latest complaint is from Washington, whence it is alleged that the employees in

the Treasury Department are using too much water and the Secretary is obliged to explain that this is necessitated by the defective plumbing found in that building. We would earnestly say that one of the very least sins of which a man can be guilty is the free use of water in any and every way.

CUCUMBER VINES FOR MOSQUITOES.

According to the *New York Tribune*, a very old colored woman who spent many years of her life on Long Island, where she worked in the market gardens, says that however bad the mosquitoes used to be they never attacked her when among the cucumber vines. Here is a hint for peace-loving Jerseymen. May not these vines be grown to advantage in boxes and twined over the windows, and thus the inmates of the house be permitted to rest and even to sleep unmolested by these pests?

TYPHOID FEVER IN CINCINNATI.

According to the *Telegraph*, Oct. 26th, there are now five hundred cases of supposed typhoid fever in Cincinnati, and the disease is rapidly spreading: fifty cases are at the Betts Street Hospital alone. The fever for the most part is confined to children. The disease is engaging the serious attention of physicians, and many of them among whom is the Health Officer think the low stage of the river and the consequent foulness of the water to be the cause of it. Typhoid malaria is also present.

HOW THE THAMES IS POLLUTED.

Until little more than a month ago (says the London correspondent of the *Medical Record*) dwellers in house-boats and steam-launches (both of which abound

on the upper river) have been allowed to throw overboard refuse of all kinds into the river just above the in-takes of the water companies. After being permitted for years, this has now been forbidden, and will, it is hoped, be put a stop to. But other equally bad sources of pollution remain.

LOOK OUT FOR CORK LEGS.

A gentleman in London thoughtlessly omitted to remove his cork legs before bathing. The laws of nature are seldom suspended in behalf of individuals, and they were not in this case. The gentleman was suspended instead. In the water the legs at once assumed a superior position and maintained the upper hand of the gentlemen, so to speak, in spite of his most violent struggles. He would have been drowned had it not been for timely assistance.

PROF. LOISETTE'S MEMORY DISCOVERY.

Prof. Loiset's new system of memory training, taught by correspondence at 237 Fifth Ave., New York, seems to supply a general want. He has had two classes at Yale of 200 each, 250 at Meriden, 300 at Norwich, 100 Columbia Law Students, 400 at Wellesly College, and 400 at University of Penn., etc. Such patronage and the endorsement of such men as Mark Twain, Dr. Buckley, Prof. Wm. R. Harper, of Yale, etc., place the claim of Prof. Loiset upon the highest ground.

THE CANNED GOODS INDUSTRY OF CALIFORNIA.

The canning of fruits and vegetables in California has increased rapidly within the last few years. It has nearly trebled in a decade, the pack of last season exceeding 760,000 cases and that of 1887 is

estimated to be at least 30 per cent. larger, making the production nearly 1,000,000 cases. Fully 80 per cent. of these canned goods are marketed east of the Rocky Mountains, not a few of them being sold for direct export to Europe.

A TEST FOR SEWER GAS.

The presence of this poisonous gas in a room may be detected as follows (says *The National Druggist*.) Saturate unglazed paper with a solution of 1 troy ounce of pure acetate of lead in 8 fluid ounces of rain-water; let it partially dry, then expose in the room suspected of containing sewer gas. The presence of this gas in any considerable quantity soon blackens the test paper.

A WATER FAMINE IN OHIO.

The water famine that has prevailed through the western tiers of Ohio counties and the adjoining territory of Indiana is growing serious. Cattle are suffering and bellowing for drink. Farm and village wells are dry, and in other wells the low stage of water is breeding typhoid fever and kindred diseases.

RAVAGES OF SMALL-POX IN HAVANA.

During the last five months there were 5432 cases of small-pox in Havana, 12½ per cent of which were fatal. Of those who died from the disease, 434 were whites and 245 colored. The largest number of deaths occurred in September, the total for that month being 277.

THE LONDON "COLLEGE OF STATE MEDICINE."

An institution has just been founded in London under the title of "The College of State Medicine." Its objects are the advancement of sanitary science. The acceptance by Sir Joseph Fayrer of the office of president is almost in itself a guarantee of success.

NINTH INTERNATIONAL MEDICAL CONGRESS.

MEDICAL AND SURGICAL EXHIBIT.

Never in the history of organized medicine in this country has such interest been manifested in a semi-professional event as was shown in the medical and surgical exhibition of the Ninth International Medical Congress.

From the morning of the opening day until after the last session the members and their friends fairly besieged the exhibition hall, all manifesting a lively interest in the many new, valuable and interesting drugs and appliances brought to their notice, in a most intelligent and courteous manner by their manufacturers.

Indeed, so many valuable hints were disseminated by the commercial gentlemen in charge, and so many really practical suggestions were offered, that one of the foreign members is quoted as pronouncing this exhibition one of the scientific sections of the Congress. A prominent Washington physician had visiting him a professional friend, who could devote only one day to attending the meeting, and he advised his friend by all means to spend that day in the exhibition hall, saying: "You can learn more there in a day and derive more practical benefit than by attending the sessions of the Congress and its various sections." This was said, too, without any attempt on his part to detract from the legitimate work of the Congress.

The entire profession now recognize the brilliant success of this meeting, and certainly not the least attractive feature was its medico-commercial annex.

The interest was so intense and the crowds of visitors so great that it spread to the *plebs*; and Washington demonstrated its ability to furnish a well-dressed crowd for a free show.

Ladies and females visited the hall in such large numbers, and samples disap-

peared so rapidly that it became necessary after the second day to restrict admission to members (decorated) and friends accompanying them.

This only slightly lessened the number of females applying for admittance, but it kept them standing in picturesque groups, *outside* the hall, they creating many ludicrous situations by their efforts to obtain the (to them) forbidden fruit. As an illustration there is cited the experience of a prepossessing and harmless looking young doctor from the wicked city of Chicago, who was stopped at the entrance to the hall by two of Washington's fair denizens, they asking him to have them admitted as his *friends*.

He agreed on condition that both of them kiss him and their enthusiastic answers startled the door-keeper and made the young Westerner a much envied individual for the balance of the week.

Much comment was created by the liberality of many of the exhibitors, shown by the character and magnitude of their exhibits.

It is estimated that one of the largest and most interesting displays was made and maintained at a cost of not less than six thousand dollars.

One of the prominent scenes was a table containing the standard medical works of such authorities as J. Milner Fothergill, Eustace Smith and Lewis Starr. Continuously surrounding this table were eminent members of the Congress listening to lectures alternately delivered by a dapper little man, a ponderous individual with dramatic mein and tendencies, a blonde personage with insinuating voice and smile, and a dignified professorial looking gentleman.

It was an attractive exhibit of Mellin's Food. The eloquent individuals, being the representatives thereof, showed its

chemical composition by referring to analysis of Stutzer, Fresenius, Leeds and others, and offered satisfactory testimony of its undoubted physiological properties by frequent reference to the medical works above mentioned.

Another most interesting display was the food that supported Gen. Grant in his last days, "*Bovinine*," of The J. P. Bush Mfg. Co., of New York City. It is stated on the best of medical authority that but for the peculiar nutritive properties of this food "*Grant's Memoirs*" would have remained unfinished. He almost subsisted on it during the last four months of his life.

The original letter from Col. Fred. D. Grant ordering this food was an interesting feature of the exhibition. The peculiar value of "*Bovinine*" lies in the fact that it is a raw food, containing the albumenoids unchanged. It possesses great nutritive qualities, is very easy of digestion and quickly assimilated.

In a paper read before the Section on Diseases of Children, Professor Albert R. Leeds, of New Jersey, claimed that he had successfully solved the problem of infant nutrition by the employment of a tryptic ferment in conjunction with cow's milk, and that this ferment (on the market under the name of "*Peptogenic Milk Powder*") afforded the profession facilities for making an absolute substitute for mother's milk. This milk powder and experiments with it were shown by Fairchild Bros. and Foster, of New York City. They also exhibited their "*Essence of Pancreas*," which possesses wonderful activity in converting starch into sugar.

The enterprising firm of Parke, Davis & Co., had the largest, the most unique, and possibly the most instructive display. The crude drug and the various pharmaceutical processes through which it passes in its transformation into the concentrated,

elegantly finished pharmaceutical preparation, were beautifully illustrated.

Two features of their exhibit deserve special mention,—the cinchona exhibit, and the reproduction in wax of the flowers of medicinal plants. The former was the most complete collection of cinchona barks ever brought together. It was gathered by their own botanist who, to make this collection, visited every country where the cinchona tree grows wild or is cultivated.

The reproduction in wax of the flowers of medicinal plants was most novel and attractive. This method of familiarizing students with the natural appearance of the medicinal flora would be a valuable adjunct to our pharmaceutical colleges.

The profession are indebted to the enterprise of this house for much important information and many valuable remedies, their policy being to publish full details of their research, methods and experiments.

An attractive pyramid of pure, white perfectly soluble pills formed the exhibit of Wm. R. Warner & Co., of Philadelphia, New York, and London. Millions of pills are made each day by this firm, and every one of them perfectly soluble. Their bromo-soda is almost specific for headache and nervousness; many physicians used it each morning.

This house was the first to recognize the need for a means of administering remedies, oft repeated in small doses, resulting in the introduction to the profession of their now universally used "Parvules." The quantity and frequency being calculated to a nicety, they afford the most perfect dosimetric system.

The McIntosh Galvanic and Faradic Manufacturing Co. had a fine display of batteries and microscopes. Much interest was manifested in their new medical-dynamo, which gives a current of electricity for electrolysis, light and cautery.

They also showed the first apo-chromatic objectives made in this country.

Tarrant & Co., of New York, exhibited the genuine imported Johann Hoff's Extract of Malt, for which they are agents and importers.

The thirty gold medals displayed by Thomas Leeming & Co. were silent witnesses of the merit inherent in "Nestle's Milk Food." This is one of the oldest and best known infant foods on the market.

The well-known Horlick's Food was also there, and received many commendatory words from physicians who had used it with marked success. "Horlick's Dry Malt," an elegant and convenient digestive ferment, was a unique feature of this same exhibit.

The Malted Milk Co., of Racine, Wis., here made the *debut* of their "Malted Milk," and it is said several thousand physicians "sampled" the *debutante*. Subscribers to the ANNALS can also procure a sample by applying to the manufacturers.

Chapman, Green & Co., of Chicago, exhibited their Chemical and Pharmaceutical products, also their Albuminous Iron Compounds, as well as Dr. Rose's Peptonized Beef and its preparations.

Hance Bros. & White exhibited a line of their fluid, solid and powdered extracts; Pills, Compressed Lozenges, Tablets and Triturates, Elixirs, Syrups, etc. Also their Absorbent and Medicated Cottons, which have attained such a reputation for superiority.

Some new and strikingly desirable features in pill making were shown by the Upjohn Pill and Granule Co. Their pills are all made without excipient, being in fact powdered drugs encapsuled in an extremely thin and freely soluble coating, thus securing permanent solubility.

The handsome exhibit of the many valuable and indispensable medical an

surgical products of the Seabury Pharmaceutical Laboratories (Seabury & Johnson), attracted much attention. Hydronaphthol in its crude form and various combinations; Seabury's Accident Case; Porous Felt Splints and a full line of Antiseptic Dressings were prominent features of this display.

The largest exhibit in the main hall was that of Grosvenor & Richards, of Boston and New York, manufacturers of medicinal and surgical Plasters, antiseptic and absorbent surgical dressings of every kind. The whole lower end of the hall was used by this firm to exhibit their many specialties, including Dr. Grosveniro Bellcapsic Plasters, Grosvenor's Belladonna Plasters, etc.

The Wallian Oxygen Co., of 119 East 28th St., New York, exhibited a very unique portable apparatus for the instantaneous preparation of pure oxygen in the office, or at the bedside. Although contained in a case 16x11x8 inches, this ingenious little laboratory can be made to yield ten gallons of pure and *dry* oxygen every twenty minutes, with the mere lighting of a spirit lamp. It places this valuable agent at the instant command of every physician.

Johnson & Johnson, New York. A fine line of medical plasters, used as a substitute for ointments similar to those recommended by Prof. Unna of Hamburg, and "papoid," the vegetable pepsin highly indorsed by Prof. Finkler, of Bonn, was shown by Johnson & Johnson, of New York City. Their antiseptic gauzes and dressing papers are a great improvement in surgical dressings.

The Chas. H. Phillips Chemical Cos. display of that delicious beverage, "Digestible Cocoa," attracted a crowd. It was freely served by its representatives. This was one of the exhibits that the ladies patronized.

The well known disinfectant, "Platt's Chlorides," was of course shown. As well "Paint the Lily White," as speak of its virtues to American physicians.

Powers & Weightman placed on exhibition a complete and comprehensive exhibit of fine and rare chemicals used in medicine and the arts; The whole was elegantly arranged in two parlors, and afforded much gratification and instruction to the hundreds of physicians and thousand of visitors that viewed it.

Delicious beef tea was served by the Cibils Co., of Boston, made from their celebrated "Cibils Beef Extract." This preparation received the cordial endorsement of the Cambridge (Mass.) Medical Improvement Society at its January meeting.

It is nutritious, palatable and very well borne by the stomach, as many physicians testified the day after the banquet.

The Wm. S. Merrell Chemical Co., of Cincinnati, made an exhibit of their well-known preparations, and many of their recent additions to the *materia medica*. Their white and yellow alkaloids of hydrastis, with its various salts and solutions, commanded universal attention. Their salicylic acid from oil of wintergreen, and their pure boracic acid and its combinations, are unrivalled preparations. Every article they exhibited was produced in their own laboratory, from whence emanated some years ago our first practical information on that now almost indispensable drug, Hydrastis.

It was shown that the "Lactated Food" of Wells, Richardson & Co., of Burlington, Vt., is the chief reliance of many eminent physicians in the treatment of cholera infantum. An important consideration is its low price, a single dollar buying enough for 150 meals for an infant.

Probably more samples of "Bromo-caffeine" were carried away than of any other single article, and the reason for this is that possibly a majority of the physicians had headaches, and this cures it. The samples were furnished by Keasbey & Mattison, of Philadelphia.

The Indians of Peru, who were the original consumers of the coco, always mixed the leaf with ashes (phosphate of lime and soda) before chewing it, and on this principle is manufactured the Phosphated Coca-Malta, which was exhibited by the Mutual Chemical Co., of New York City.

The "Sanitas" disinfectant preparations, so celebrated in Europe, were exhibited for the first time to the medical profession of this country by the American and Continental "Sanitas" Co., New York City. They are now manufactured in this country, thus greatly lessening their cost.

Mexican Pulque, the sap of the century plant, has been used in a crude state from time immemorial as a tonic stimulant and a most valuable remedy in albuminuria. It has heretofore been unavailable, but the Mexican Pulque Co., of Jersey City, N. J., have succeeded in preserving it indefinitely in a commercial form, and now offer it to the profession.

Sharpe & Dohme, of Baltimore, showed antiseptic disks of corrosive sublimate, and hypodermic tablets of various substances, and demonstrated how all of them would dissolve in less than five seconds in cold water.

Liebig, the world-famous chemist, says: "For purposes of strengthening and reviving the vital force, when in a state of exhaustion, Wine is unsurpassed by any natural or manufactured product," but in these days of adulteration, it is of vital importance that the wine prescribed should

contain no deleterious drugs. Such a wine made from oranges, pleasant and nutritious, containing only nine per cent. of alcohol and five per cent. of sugar and solids, was dispensed to the physicians by the Florida Wine Co., of Philadelphia.

Every physician has felt the need of an electrical battery, that would serve the various requirements of a general practice, and just such batteries were displayed by the Galvano-Faradic Manufacturing Company, of New York City.

The general practitioners seemed specially interested in the saddle-bags and buggy-cases of the Mellier Drug Company of St. Louis. For years these goods have been recognized as standard.

The oldest firm of manufacturing chemists in this country is Hazard & Co., of New York City, and they exhibited a large line of elegant and reliable elixirs, tablet triturates, druggists sundries, etc.

The most popular gynæcological and surgical chair with the medical profession of this country is the Harvard Chair. Its capability of being placed in every desired position was shown by the Harvard Co., of Canton, O.

Digestylin, a compound of pepsine, pancreatine and ptyalin was shown by Wm. F. Kidder & Co., of New York City. It is a famous dietetic auxiliary, presenting the three necessary digestive ferments in a palatable form with their several powers unimpaired.

Among the many new instruments shown by Charles Lentz & Sons, of Philadelphia, the improved Mackenzie light condensor attracted most attention. It is a most convenient apparatus for examinations of the throat.

A sanitary washstand, which, without sewer connections, will furnish the equivalent of running water in a bed-room, was shown by the Bond Furniture Improvement Co., of Washington, D. C.

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Communications.

SANITATION IN JAPAN.

Specially prepared for THE ANNALS OF HYGIENE.

BY W. K. BURTON,

Professor of Sanitary Engineering in the Imperial
Institute, at Tokio, Japan.

The country of Japan is one which has of late years created so much interest throughout all Western nations that no apology is necessary for occupying a few pages of the ANNALS OF HYGIENE with a short description of its sanitary condition, or rather of what I have yet been able to see of its sanitary state, and this in spite of the fact that "Sanitation," as generally understood in Western countries, is a thing as yet almost non-existent in Japan.

I should say a word or two first as to what opportunities I have had for judging of the sanitary condition of Japan.

The first two months of my residence here were spent in Tokio, the capital of this country, and I may say that they were spent rather in accustoming myself to my new surroundings than in doing anything else. The last six weeks or so have been spent in making a tour of the Northern towns of Japan, in company with a medical doctor, an executive member of the Sanitary Bureau, and a graduate of the college of engineering. The object was to report on the sanitary conditions of these towns, and my attention was specially

directed to a consideration of sewer disposal and of water supply.

In connection with sewage disposal, it is a very common mistake in Europe, and, if I may judge from what I read in the American Sanitary papers, in America also, to consider that if provision has been made for disposal of the actual human manure all has been done that is necessary. That this mistake should be common amongst those who have not studied sanitary science is natural enough, but that it should be held by many who have made such a study is strange; it is however true. We often hear it stated by people who have given some attention to sanitary matters, that it would be an advantage if large cities were provided with dry earth systems in place of water carriage systems. Now I have nothing to say against the dry earth system. It is an excellent one for country houses. I do not myself consider it a very good arrangement for a town home, but am quite willing to admit that this is merely an expression of private opinion and that a dry earth system might be very satisfactorily applied to a large town, but it is most emphatically the case that it can never do in place of a sewerage system. A sewerage system is a thing unavoidable in every large city, and the only question is whether it is to be a bad or a good system. 25 gallons of water per head is a very moderate allowance for a town. This water comes into the town pure, or is supposed to do so. It

certainly leaves the town impure, and a great part of it very impure.

Some time ago experiments were made to determine what proportion of the solid matter of the sewage of towns, in which the actual manure was mixed with the rest of the sewage, consisted of the former. The result was that only about $\frac{1}{4}$ of the solid matter was actual manure. The other $\frac{3}{4}$ moreover was of a particularly foul nature. Every one who has had anything to do with practical drainage knows how intensely foul the discharge of various sanitary appliances, other than water closets, and especially a scullery sink, may be. In fact the chief difference between this foulness of actual ordure and of other household discharges is that the first is evil smelling from the beginning, the second only becomes so after it has been allowed to remain for some time stagnant, like in grease traps, drains, sewers or other places till it has decomposed. Baldwin Latham states that sewage from which w. c. discharge is excluded is quite as foul as that into which it is admitted.

It is true that I am speaking here rather of foulness as judged by smell than by anything else. Of course, I well know that it is not the *smell* from foul sewage that is dangerous, and that there may be much danger when there is no smell. This is true, but, on the other hand, there is pretty sure to be danger when there *is* smell; and if it is the case that certain diseases can only be conveyed by fæcal matter (which is doubtful), it is also certainly true that others may be conveyed by, or arise from, foul sewage in which there is no fæcal matter.

This matter of the necessity for providing efficient sewers for carrying away the non-fæcal matter, even if other provisions be made for the latter, is made very strongly evident when we consider the condition of the towns of Japan.

The ordure in all towns in Japan is carefully saved to be put on to the rice fields. It is received in large vessels generally of stoneware, from which it is periodically removed, and is carried by hand to the fields. Now, crude as this arrangement is, it has its good points. For one thing, this manure *is* carried to the fields, which is a great matter. The defect lies in the fact that the removal is not sufficiently frequent to prevent the manure from decomposing in the house, and that the manner of removing it, and carrying it through the streets, causes some nuisance.

Probably this is a case, if there ever was one, where the dry earth system might be adopted with advantage, although it would naturally be difficult to overcome the objection, on the part of the peasants, to carry the greatly increased load that would have to be carried were the fæces all deodorized with dry earth.

But the truth is that, imperfect as may be the method of removing the actual human manure, the trouble arising from it is a mere trifle compared with that arising from the remainder of the sewage.

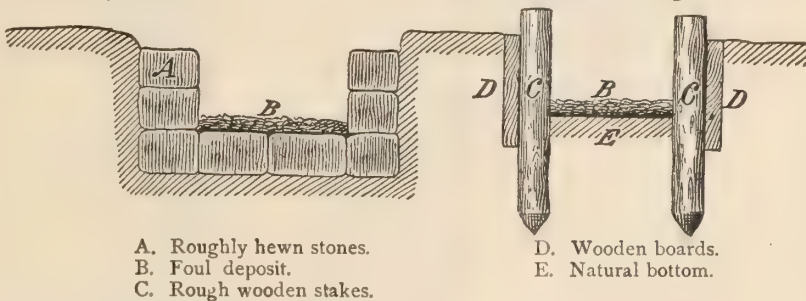
Round, or at least in front of, every Japanese house, in every town in which I have as yet been, is an open ditch of stone or wood into which all sewage, except actual manure, is poured; and, indeed, a great deal of the refuse of the nature which, in England, is *supposed* to be burned in the kitchen fire, but which generally finds its way into the ash-bin.

I speak here of such houses as the great majority of the people live in, and in which they will probably continue to live for many generations. Many of the greater public offices, and a small percentage of the residences of the richer Japanese, are constructed in foreign style, and do not call for any particular remark here.

The ditches that I mention are flat-bottomed; they are as often as not without any fall at all, and frequently do not carry away any of what they receive, except in flood time. Their condition, after a long period of hot, dry weather (thermometer perhaps 95° in the shade every day), may be imagined.

It is to be borne in mind that the towns in Japan are not mere villages. Tokio is a city of more than one million inhabitants, and is spread over an area nearly as large as that of London.

I give here two rough sketches of the sections of the ditches, showing the construction of those of wood and of those of stone. They are very poorly drawn, but perhaps a draughtsman will be able to make something of them.



A. Roughly hewn stones.
B. Foul deposit.
C. Rough wooden stakes.

D. Wooden boards.
E. Natural bottom.

I have also photographed the front of a Japanese house, so as to show the open ditch conspicuously, and send a print.

The ditches are frequently roughly covered with boards, as may be seen in the print cut, in front of the door. But it will be readily understood by those who know anything of sanitary matters that this is no protection against the gas emanations which, once generated, are certain to find their way into the air. The ditches are, as a rule, quite close to the houses, as shown in the photograph; in a few cases I have seen them actually passing inside. The main ditches in the larger towns are naturally very large. In Tokio they are canals rather than ditches (taking size only into consideration).

The stagnant sewage in the ditches of course contaminates the atmosphere, but this is a minor evil. The ditches are not water-tight and the sewage soaks into the ground. In fact the soil of all the more thickly packed parts of Japanese towns must be quite sewage saturated, and from this soil the *water for all purposes is generally taken in shallow wells*. I conceive this to be a greater evil than the mere atmospheric contamination. These wells are commonly constructed in a manner differing from anything that I have seen anywhere else.

They are made of what I may call wooden tubes, sunk in the ground. These tubes are of large diameter, some three or four feet, and cooper-made, of thick wood. I show a rough section of the

sort of thing, and send a print of a photograph of the well opposite to my own house.

It will be seen that the method of raising the water is by a rope running over a pulley. There is a bucket at each end of the rope. Where the wells are very shallow it is common to erect a long wooden lever over them. To one end of this is suspended the bucket; to the other a counter weight.

The wooden box* seen fixed to one of the posts supporting this canopy of the well is a refinement introduced by the University authorities for my own special benefit. From it there is carried to the

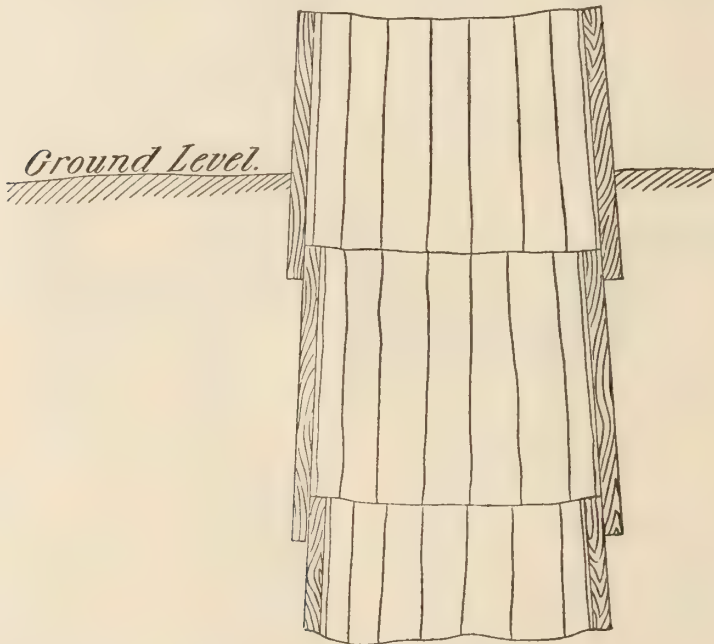
* I find that one of the figures conceals this box.

kitchen premises, which are at a distance of some eighty yards, a pipe of bamboo, so that it is not necessary to carry all the water by hand, but merely to empty it into the box. By the way, a long treatise might be written on the infinite number of uses that the Japanese make of the bamboo.

The wooden sides of the well are supposed to be water-tight, and I have no doubt that, but in the case of very old wells, they are, as Japanese cooper work

the girls of the family, and they congregate about the well, waiting their turn, chattering, gossiping, and laughing with the never failing good nature which characterizes the Japanese, especially the women kind.

But of course one knows well enough what this crowding to the wells really means. It means that, even of the inferior water available, there is an insufficient supply, and indeed it is the case that, in some of the towns, were the hand



WOODEN TUBES.

is of the very highest excellence. Of course, when this is the case, the water rises from the bottom of the well only, and, although this is at no great depth, doubtless a less contaminated fluid is got than if it were allowed to flow in from the sides.

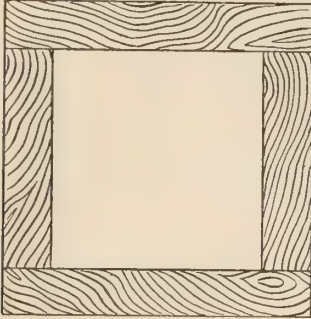
It will be seen that the well is not an unpicturesque object. In some small towns, *where there are not wells enough*, the sight at each of them in the morning is very pretty. From each house there comes a water carrier, generally one of

drawing of water thoroughly systematized at each well, so that no time should be wasted, only a few gallons per head could be drawn during the whole forepart of the day, which is the time when the water is most required.

The well system pure and simple is now supplemented in some of the large towns, Tokio, amongst the number, with a water supply carried from the country through large wooden pipes.

These pipes are of the section shown in the annexed sketch, the parts being spiked

together. The joints between the lengths



are made by tapering down one end of a length, and widening out the others so that

a rough spigot and faucet arrangement is made. The pipes are then jammed into each other.

This is a crude arrangement, still inasmuch as it does carry comparatively pure water into the towns, it is a great advantage. The weak point of the system, as carried out, appears to me to lie in the fact that the old wells have been retained as tanks for storage, the distribution being effected partly or altogether by bamboo pipes. Of course wooden pipes do not permit of a pressure which will allow the water to be stored at heights.



JAPANESE HOUSE.

The old wells being used without anything having been done to make their bottoms water tight, it appears to the writer that one of two things is pretty sure to occur. The water in the wells will rise above the natural level of the water in the ground, with the result that the water is wasted, or it will fall below the natural level, with the result that the deficiency will be supplied from the old source, namely, the contaminated soil of the town; this, apart from the fact that a wooden tank

are surrounded with high mountains down which flow numerous streams of water of the greatest purity. It is merely a question of selecting the most suitable source of water and of expense. Already water-works on the Western system, with cast-iron mains, etc., have been begun in several towns, and I hope very soon to see them carried out in all the principal towns of the country.

The problem of sewage disposal is a much more difficult one. In giving advice on



SKETCH OF WELL.

inaccessible for cleansing is not the very best arrangement for storing water in. One advantage, however, this system of storing water underground has. The water remains cool. A glass containing water newly drawn from my own well, in hot weather, immediately becomes "frosted" from condensation of moisture.

The problem of a plentiful and in every way excellent water supply will be one very easily solved for all the Northern towns of Japan that I have seen. They

the matter I have been guided by the following considerations: It appears to me necessary that something should be done at once to prevent soakage of sewage into the ground; but a complete sewerage system is at present beyond the means of the towns. It is therefore desirable to carry out a system which, with a given amount of expenditure, will give the maximum improvement. At the same time it is most undesirable that anything in the way of a "temporary"

system, in the sense of one which will need to be presently undone again, should be instituted. The present works may be considered temporary in the sense that they are not complete, but they must be so arranged that they will form part of a future complete system.

Considering these wants, I have decided to recommend, in the meantime, the following, leaving all else for future consideration. The construction of a set of pipe sewers in every town to carry away the liquid sewage, but not to carry rain water.

Sewers to carry rain water would require to be very large in Japan, where rain is often very heavy for a considerable length of time. They would be expensive, and, probably, even if they were made of oval section, there would be difficulty in keeping them clear of obstruction during long periods of dry weather, when there would be no water but the sewage running in them. Farther, I see no objection to allowing the present ditches to serve for the rain water, or rather I see only one objection, namely, that if they are allowed to remain, the force of habit may induce the people to empty sewage into them. Time will soon show, however, whether they may be left permanently, or for an indefinite time, to act as rain water channels merely, or whether, after the sewage is provided for, it will still be urgently necessary to construct a separate system for carrying rain water. Of course, there will be no difficulty in so doing if it be considered desirable.

As regards ultimate disposal of the sewage, I shall suggest to leave things, temporarily, as they are. Of course, when towns are on the seashore, they at present drain into the sea, and it is impossible that they should be drained anywhere else, except by the use of pumping

machinery. Where they drain into rivers at present it will be a great improvement to drain them *efficiently*, and I shall suggest such an arrangement of the outfalls of the sewers to the river, that they may be collected at any time by an intercepting sewer, whose object will be to carry the sewage either to the land or to the sea at the mouth of the river.

The staple crop everywhere in Japan is *rice*. I am at present trying to find any record of experiments in sewage irrigation of rice fields, and so far have found none. I wonder if any of your readers can help me in this matter?

If rice fields will stand liquid sewage *all the year round*, the problem of sewage disposal—really, at present, about the greatest problem for all sanitary engineers—will be at once solved in Japan, for the fields are already well prepared for irrigation, it being necessary to keep the roots of the growing rice always under several inches of water, and to carry liquid sewage to them would cost comparatively little.

If it be found feasible to carry the liquid sewage out to the rice fields, it will then at once become a problem whether it will not be advisable to carry the actual ordure to them also, by means of the sewers, thereby saving the vast amount of labor (of a most disagreeable character) at present expended in carrying the sewage by hand.

It is because this and several other things are at present undecided, and because I believe the open ditches to constitute a greater danger than the “closets,” that I suggest no alteration in the latter at present.

Another problem that has troubled me is what to advise with regard to connection of the houses with the drains. One is met with customs, a general manner of life, structure of houses, &c., so totally

different from what we know them in the West, that all one's "practical experience" is thrown to the winds; and one is driven to draw upon his own resources. Here again I have felt that the great guiding principles should be to give the most possible for a moderate expenditure, and specially to do nothing which will have presently to be undone. I intend, therefore, to propose merely an open gully, with a side inlet opposite one corner of each house, or between each two of the smaller houses. The sewage can then be emptied directly into the gully, or the inmates of the house may, if they think proper, carry bamboo pipes from the house to the side inlet. In any case thorough "disconnection" is received, and no elaborate arrangements are made which may have very soon to be unmade.

I fear I have been giving such readers as get the length of this a very gloomy notion of the sanitary condition of Japan; but it must be borne in mind that, on arriving in the country, it is natural that my attention was first directed to the most defective arrangements. Those that I have described certainly are bad, but there are many conditions in the lives of the Japanese people which must tend in a great measure to compensate for the evils. There are many of such things that I would willingly write of, but I fear I have occupied as much space as the editor is likely to have at his disposal. Of the habit of frequent—one might almost say incessant—bathing in hot baths, of the hot mineral springs of great medicinal value (I believe), open to the public and largely taken advantage of, of the food and drink of the people, of these and a hundred other things I could write much that would probably be more interesting than a mere discourse on drains. Perhaps at some future time.

By the way, your correspondent who in

a recent number described (accurately enough) a Japanese bed, must have fallen in luxurious paths. I could give a very different description of some of the beds I lay on during my travels. Then the food. I got to like it immensely towards the end of my travels, but at first could not manage it, and was sometimes put to hard straight. Hard boiled eggs and very green and unripe apples formed, for several days, pretty well all I could get that was to me eatable.

THE QUARANTINE SYSTEM OF LOUISIANA—METHODS OF DISINFECTION PRACTICED.*

BY JOSEPH HOLT, M.D.,

President Board of Health, State of Louisiana.

In describing the methods of disinfection used in the quarantine of Louisiana, it is necessary first to examine the system itself synthetically.

There are three maritime approaches to New Orleans: the Mississippi river, which is the central and main avenue; the Rigolets, thirty miles to the eastward, a narrow strait connecting Lake Pontchartrain with Lake Borgne and the Gulf of Mexico; and the Atchafalaya river, near its debouchment into the bay of that name and Mexican Gulf, eighty-two miles to the westward.

On account of the character of shipping coming through the two lateral approaches, "light in tonnage and mostly from domestic ports," the Rigolets and Atchafalaya are completely closed by a proclamation of forty days' detention against all vessels from quarantined ports, compelling such to seek the Mississippi as the only available route to New Orleans.

* An addendum to the Report of the Committee on Disinfectants of the American Public Health Association.

This is done in order to avoid the immense expense of keeping up three completely equipped stations, and to concentrate at a single point the fight against infection.

The quarantine in the Mississippi is a system composed of three stations, the first of which is an advance guard inspection station, situated at Fort Eads, one hundred and ten miles below New Orleans, where the waters of South Pass are jettied into the Gulf.

When an inward bound vessel comes into the offing, she is immediately boarded by a thoroughly skilled medical officer, and a careful inspection is made of her sanitary record and present condition.

If from a non-quarantined port, and all is well, she is given pratique, and goes on to the city. If from a quarantined port, but presenting a clean health record of voyage, and no evidence of sickness of a dangerous or doubtful character, she proceeds to the upper quarantine station, situated on the left bank of the river, seventy miles below the city, where she is subjected to a full course of sanitary treatment, and is detained such length of time, not exceeding five days (except in rare instances, wherein further observation may be deemed necessary), as the Board of Health may provide.

If, upon inspection of a vessel entering the river, she is found to be foul—that is, showing positive or suspicious evidence of infection, either in a person then ill or in a foul health record of voyage, she is at once remanded to the lower station, located on Pass à L'Outre, an unused outlet of the Mississippi, one hundred and three miles below the city. The sick, if any, are at once removed to the hospital, where every provision has been made for them. The vessel, with the well on board, is dropped down stream a few hundred yards and anchored. In

the meantime the quarantine tugboat, with its complete disinfecting outfit, has been telegraphed for, and speedily arrives from the upper station, when the work of disinfection begins, and does not cease until the vessel has been subjected to the most vigorous application of the solution of the bichloride of mercury; her atmosphere, below deck, completely replaced with one heavily charged with sulphurous oxide, and every article of baggage and ship's wardrobe has been saturated with the mercuric solution.

A ship known to be infected with one of the three great pestilential diseases—small-pox, cholera or yellow fever—can stand and must endure extraordinary treatment, even if clothing is wetted and some articles damaged. “They who go down to the sea in ships,” assume the perils of the voyage, among which is this occurrence of finding themselves on an infected vessel, and being compelled to undergo a cleansing, for they have no right to bring their perils ashore and endanger others.

The immediate segregation of the sick and the well, and disinfection of the ship and all baggage (in the case of a cholera-infected vessel extended to the disinfectant washing-out and refilling of the water-tanks, destruction of the food supply and revictualling the vessel), constitute the treatment of an infected vessel at this station. The ship, together with all on board, is held for observation a period of ten days, or more, according to circumstances, when she is released and proceeds to the Upper Station, where the processes of sanitary treatment are repeated, with the addition of the use of moist heat applied to baggage, ship's apparel, etc. (which latter process will be described hereafter), and the vessel is then allowed to proceed to the city.

This course of treatment at the Upper

Station, while probably unnecessary, is enforced purely as an extraordinary precaution.

Inasmuch as infected ships are the exceptions, but inasmuch also as the Board of Health will take no risk in the case of vessels from known infected or suspected ports, regardless of bills of health, the vast majority of vessels are treated at the Upper Station.

Arriving at this station the vessel is brought alongside the wharf. All on board—officers, crew and passengers—are at once sent ashore, where they find ample accommodation in commodious shelter, provided for their entertainment during the time occupied in the sanitary treatment of the ship and all baggage.

As soon as this is completed they are permitted to return aboard ship, where they remain under observation during the prescribed period, determined by the remoteness or nearness of the port against which these precautions are taken.

The object of this brief detention for observation, after the sanitary treatment of the vessel has been completed, is to allow for a probable outbreak of an infectious disease already incubating in the system of any one on board.

As an essential part of the service there is a tugboat of sufficient power to move a sailing vessel to or from the wharf.

In addition to this requirement, this boat is equipped with a complete outfit for generating and applying germicidal gas for displacement of the entire atmosphere within the ship, transported, perhaps, directly from some infected port. In the hold of this tug is constructed a wooden tank of 2000 gallons capacity, to hold the bi-chloride of mercury solution for the treatment of vessels in the Lower Quarantine, as described. This tank is furnished with a steam pump (made of iron on account of the greater resistance of that metal to amalgamation) supplied with three-quarter-inch rubber hose.

(TO BE CONCLUDED IN OUR NEXT ISSUE.)

AN INTERESTING CASE OF POISONING BY TYROTOXICON.*

BY VICTOR C. VAUGHAN, M. D., OF ANN ARBOR, MICHIGAN.

Dr. V. C. Vaughan made a verbal report relative to tyrotoxin poisoning in Milan, Michigan, which presents some new features. He was called September 25th to see the family, two members of which were dying, and two others were seriously ill, while one other, a daughter 20 years old, who had been away for some months, was not sick. The father had been sick about eight days, and the three others for a shorter time. The attending physician, suspecting that the sickness was due to tyrotoxin, had warned the daughter when she returned not to drink milk. She complied and was not sick. The mother and son died. He found the four patients breathing in a labored manner, the pupils of the eyes were dilated, and throbbing of the abdominal aorta was marked. The son was more or less delirious. All would pass urine involuntarily, but constipation was marked. Unfortunately there was no thorough examination of the body after the first death; but upon the second death a thorough *post mortem* examination was held. Nothing abnormal was found, except that the large intestine was constricted by its circular fibres, which accounted for the constipation; the heart was arrested in systole; the death occurred from failure of the heart. The analysis of the stomach by Prof. Prescott revealed no mineral poison. Dr. Vaughan's assistant, Mr. Novi, found enough tyrotoxin in the contents of the stomach and intestines to sicken a cat.

Dr. Vaughan had confirmed the diagnosis of the attending physician, who said

* Abstracted from Proceedings of the Michigan State Board of Health.

it was sickness due to "cheese poison." It was not like arsenic poisoning, and although it somewhat resembled poisoning by belladonna, yet there were points of dissimilarity enough to throw that out as a possible cause, especially as another poison was actually found in the stomach.

Dr. Vaughan soon made up his mind that the sickness was probably due to the bad and unwholesome condition of the house, which was 50 years old and nearly rotten. One floor was nearly rotted away, and was covered by a newer one. The house had settled a good deal; there was no cellar; the land in all directions sloped towards the house, so that the building was constantly on damp soil, as there was no artificial drainage. The sweepings and moppings for years had accumulated in the cracks of the floor, so that when the floor was taken up a nauseating odor arose. The farmer sold cream to a creamery in the neighborhood, the proprietor of which had received the documents of the Michigan State Board of Health on cholera infantum and poisoning by cheese, milk, etc. He induced the farmer to keep his milk away from the house and in a cool place until the cream was collected and taken away. The milk consumed by the four members of the family was kept in a small closet or pantry in the house, where they frequently went and helped themselves to milk. They had been sick in the same way a number of times before this violent outbreak which resulted in the death of two of their number. Dr. Vaughan made experiments as follows: He placed fresh milk in the pantry for a short time, and then found enough tyrotoxin had developed in the milk to make a cat sick. He took some of the earth under the pantry floor, and placed a small quantity of it in some fresh milk, soon after which tyrotoxin was obtained from the milk,

while none could be obtained from another sample of fresh milk which stood by the side of the milk in which the earth had been placed. This seems to demonstrate that the soil contained the germ of decomposition which produces the poison.

A FRAUDULENT CARBONIC WATER.

A water sold by the "Hygeia Sparkling Distilled Water Co." of New York, is now being very extensively advertised. The following is cut from the *Medical Record*, Nov. 19:

HYGEIA WATER.

A. A. BRENEMAN, S. B.,
ANALYTICAL AND CONSULTING CHEMIST,
Laboratory:—97 Water Street,
Rooms 49 and 50.

NEW YORK, September 27, 1887.

The Hygeia Sparkling Distilled Water Co.:

Gentlemen: I have examined the sample of Hygeia Water received from you September 20, with the following results:

Parts per 100,000.

Free Ammonia.....	0.0089.
Albuminoid Ammonia.....	0.0021.
Solid Residue (at 105° C.).....	0.0857.
Chlorine.....	None.
Nitrates.....	None.
Nitrites.....	Faint Trace.

Color—perfectly colorless and transparent in a tube thirty (30) inches long.

This water is of remarkable purity. The minute proportion of "Free Ammonia" is not an indication of previous decomposition of organic matter in the water, as it would be in undistilled water, but merely a trace of material perfectly harmless of itself, which has distilled over.

The small proportion of solid residue ($\frac{1}{8}$ of a grain per gallon, or less than one part per million) could only have been attained by the greatest care in distillation and subsequent handling.

[Signed] Very respectfully,

A. A. BRENEMAN.

We bought a bottle of this water from the drug store of Mr. Frank E. Morgan (formerly John Wyeth & Bro.), removed the label, and sent it to Dr. L. Wolff for analysis, furnishing him, at the same

time, a copy of the analysis as published in the *Medical Record*. The following is Dr. Wolff's report:

Nov. 15th, 1887.

Dr. J. F. EDWARDS,

ANNALS OF HYGIENE.

DEAR SIR:

In answer to yours of the 8th inst., I submit to you below a report on the examination of a bottle of water which you sent to me along with your letter.

The bottle was devoid of label and the cork firmly secured by wire fastenings.

In your letter to me you state that the published analysis for it reads as follows;

In 100,000 parts,	
Free ammonia, ...	0.0089
Albuminoid Ammonia, . .	0.0021
Solid residue (at 105° C),	0.0857
Chlorine, none.	
Nitrates, none.	
Nitrites, faint trace.	

You request me to make control experiments to prove or disprove the correctness of this remarkable analysis, which would make the water it applies to one of the purest in existence.

The water was highly charged with carbonic acid gas, which freely escaped on opening. The experiments were made jointly by myself and my friend and assistant, Mr. W. Baum, Ph.G., and resulted as follows:

500cc evaporated to dryness, at 105°C yielded 0.765 grammes of solid residue, composed largely of calcium carbonate. The total solids would be therefore 1.53 per 1000. The chlorine present as chlorides was determined by a volumetric solution of silver nitrate to be 0.372 per 1000. The nitrates and nitrites were after these results not considered, but the organic matter present was found by Kubel's method to be 0.058 per 1000.

The water was found to be one of considerable hardness, both temporary and permanent. After these figures, of course,

comment seems superfluous. If the analysis you gave me was really intended for the water accompanying your letter, it is either based upon gross mistakes or else it is a clear fraud perpetrated by someone.

Very respectfully,

L. WOLFF, M.D.,

Demonstrator of Chemistry,

Jefferson Medical College.

Why this imposition should be practiced, when *truly* distilled water could be so easily procured, we are at a loss to understand, and we therefore merely give the facts as they are found to exist.

Special Reports.

STATE BOARD OF HEALTH OF PENNSYLVANIA.

EIGHTH REGULAR MEETING, NOVEMBER
9TH, 1887.

The eighth regular meeting of the Board was held Wednesday, November 9th, 1887, at the Supreme Court Room, State Capitol, Harrisburg, at 2 P. M., the President, Dr. Engleman, in the chair.

Members present: Drs. Engleman, Lee, Edwards, Dudley and Mr. Murphy. A letter was read from Prof. Geo. G. Groff, regretting his inability to be present, and a telegram from Dr. J. H. McClelland, stating that he was prevented from attending by illness. The explanations were accepted, and the Secretary was instructed to send messages of sympathy and regret to those gentlemen.

The Report of the Secretary was then read, embracing the following items:

1. The Annual Report of the Board to the Governor, as contained in the Annual Report of the Secretary to the Board. Adopted.

2. Instructions to the Borough Council of Troy, Bradford Co., for preventing

the further pollution of Sugar Creek. By the Secretary.

3. Report of a sanitary inspection of the Borough of Allegheny Furnace, Blair Co., by Charles B. Dudley, M. D., inspector. Both the above reports were accepted and referred for publication.

4. Report of a Sanitary Inspection of Camp Winfield Scott Hancock, by Wm. B. Atkinson, M. D., and D. J. McKibben, M. D., inspectors, with morning reports of the officers of the day. Accepted and referred for publication.

5. Action of the Secretary in reference to cases of glanders in Philadelphia.

6. Conference between State Veterinarian Bridges, of Philadelphia, Dr. C. N. Hewitt, Secretary of the State Board of Health of Minnesota, and the Secretary on interstate notification of infectious diseases of domestic animals. Action of Secretary in above cases sustained.

7. Correspondence in reference to the prevalence of epizootic spinal meningitis in New Jersey. Accepted and referred for publication.

8. Report of the Secretary as delegate to the Annual Conference of State Boards of Health at Washington, September 8th, 1887. The report was accepted and the following resolution contained in it adopted:

Resolved, 1. That this Board re-affirms the principles contained in the resolutions adopted by it at its meeting in November, 1886, and by the Conference of State Boards of Health at its meeting in Toronto, October, 1886, on interstate notification.

2. That those communicable diseases hereinafter mentioned, prevalent in certain areas or which tend to spread along certain lines of travel, be reported to all State and Provincial Boards within said area or along said lines of communication.

3. That in the instance of small-pox,

cholera, yellow fever and typhus, reports be at once forwarded either by mail or telegraph as the urgency of the case may demand; and, further, that in the instance of diphtheria, scarlatina, typhoid fever, anthrax or glanders, weekly reports where possible be supplied, in which shall be indicated as far as known the places implicated and the degree of prevalence. It was further ordered that these resolutions be appended to those adopted upon the same subject last year.

9. Report of the work of the section on State Medicine and Hygiene of the Ninth International Medical Congress, by the Secretary. Report accepted and resolution contained postponed to unfinished business.

10. Report on typhoidal pollution of Ballygomingo Creek, Montgomery County. This was an aggravated case of ignorance or negligence on the part of a physician, formerly a member of the Borough Board of Health, in ordering the excreta of a typhoid fever patient to be thrown into the creek, the said creek being used as a source of drinking water, and also running into the Schuylkill river. The action of the Secretary in reprimanding the physician and ordering disinfection of the waters of the creek was sustained and the report accepted for publication.

This report was made by W. B. Atkinson, M. D., Inspector.

11. Report of sanitary inspections of Unionville, Coatesville and other villages in Chester Co., where fevers had been prevalent, by W. B. Atkinson, M. D. This report contained strictures on the carelessness of physicians in allowing the word typhoid to be applied indiscriminately to all forms of fever, thus giving rise to undue excitement and panic.

The Secretary was ordered to prepare a circular on this subject addressed to the

medical profession. On motion of the chairman of the Com. on Water Supply, the Secretary was instructed to accompany the circular on typhoid fever with a description of a cheap and efficient form of earth closet. The report was then accepted.

12. Report of an inspection of a bone boiling establishment at Sellersville, Bucks Co., W. B. Atkinson, M. D., Inspector.

Report accepted and action of Secretary approved.

13. Letter to the Board of Health of Philadelphia on the subject of quarantine of the Delaware river. Accepted and referred for publication.

In this connection, the Secretary presented the copy of the Act of Congress, placing the National Quarantine in the hands of the Supervising Surgeon General of the Marine Hospital Service and moved that it be printed in the annual report. It was carried and the Secretary's report was then on motion adopted as a whole.

Reports of Standing Committees being in order.

The Committee on Preventable Diseases, Dr. Joseph F. Edwards, Chairman, offered a resolution recommending the delivery of illustrated lectures throughout the State, and the organization of sanitary associations in all the smaller towns; after discussion the subject was referred to the Executive Committee to report at a special meeting to be called by the President of the Board.

The report also recommended that the Board take action similar to that of the Illinois Board, in requesting the Quarantine Commissioners of the port of New York to issue certificates of freedom from danger of infection to all Italian immigrants leaving the Quarantine Station, and in requesting the presidents of railroads not to receive or transport Italian

immigrants without such certificates. The recommendation was adopted and the Secretary was instructed to take the necessary steps to carry it out. The report was then adopted for publication.

The Committee on Water Supply, etc., Howard Murphy, C.E., Chairman, made a report in reference to the drowned lands in Exeter and Wyoming Boroughs, Luzerne Co., re-affirming the report of Dr. Engleman, on the same subject in every particular, and recommending that measures be taken to compel the abatement of the nuisance. The report was accepted and referred for publication, and the Secretary was instructed to take the necessary legal steps to enforce the order of the Board.

The Committee on Adulterations, etc., Pemberton Dudley, M.D., Chairman, reported in reference to the recent cases of poisoning by chrome yellow, in Philadelphia, presenting a paper by Dr. Stewart, of Philadelphia, upon the subject, also to recent analyses of artificial foods and to the use of salicylic acid in certain brands of bottled beer. The report was accepted.

The Committee on Sanitary Legislation, etc., Dr. David Engleman, Chairman, reported that it had been deemed advisable to delay the publication of the compendium, in order to introduce the laws passed at the last session of the legislature, some of which were of considerable importance to the Board. The report was accepted.

The President then appointed the Standing Committees for the ensuing year, as follows:

1. Executive Committee, Drs. Dudley, Edwards, Lee and Mr. Murphy.
2. Committee on Registration and Vital Statistics, Drs. Lee and Groff.
3. Committee on Preventable Diseases

and the Sanitary Supervision of Travel and Traffic, Drs. Edwards and Dudley.

4. Committee on Water Supply, Drainage and Mines, Mr. Howard Murphy and Dr. McClelland.

5. Committee on Public Institutions and School Hygiene, Dr. McClelland and Mr. Murphy.

6. Committee on Adulterations, Poisons and other special sources of danger to life and limb, Drs. Dudley and Engleman.

7. Committee on Sanitary Legislation, Rules and Regulations, Drs. G. G. Groff and Dudley. Under the head of Unfinished Business, the Report of the Inspection of Camp Hancock was called up by the Secretary, and the report, together with the reports of the officers of the day, was referred to the Chairman of the Committee on Preventable Diseases, with instructions to prepare and present to the Board, at its next regular meeting, a manual of camp hygiene.

The Secretary also called up that portion of his report which referred to the Ninth International Medical Congress, and moved that the resolutions adopted by the Congress (which he said were nearly identical with those adopted by the Sixth International Congress of Hygiene and Demography, at Vienna), which was in session so soon after that there could have been no collusion in the matter), on the subject of Hygienic Education, be re-affirmed by this Board. It was carried.

The portion of the Secretary's Report, which recommended that a conference on the more efficient quarantine of the Delaware river and bay, be suggested to his Excellency, the Governor of the State, with a view to obtaining the coöperation of the Governors of Delaware and New Jersey, in obtaining a grant for that purpose from the President of the United States, was then discussed, and the Secretary was instructed to address a com-

munication to the Governor upon the subject.

The suggestion of the Secretary, that the Board should express to the supervising Surgeon-General of the Marine Hospital Service the opinion that it is expedient to forbid immigrants to land at our ports from Italian ports unless provided with certificates of freedom from infection, signed by competent authorities, was also adopted, and the Secretary was instructed to communicate with Surgeon-General Hamilton upon the subject.

The Secretary was then instructed to address a communication to the Superintendent of Public Instruction suggesting to him the expediency of distributing THE ANNALS OF HYGIENE among the school teachers as a means of acquainting the people with sanitary laws.

Under the head of new business, the Secretary nominated Dr. James Sibbold, of Wissahickon, as Vaccine Inspector for the Lower Merion District. The Secretary explained that there was a long strip of land on the opposite side of the Schuylkill from Manayunk, known as Pencoyd, which, being outside the city limits, did not have the city vaccine regulations. The children from there came to school on the Philadelphia side of the river, and as they were not vaccinated to any considerable extent, this state of things formed a constant menace to Philadelphia. The nomination was confirmed.

The Secretary nominated Dr. Spencer M. Free, as Medical Inspector for the Western Slope District.

The nomination was confirmed.

On motion the Board then adjourned.

BENJ'N LEE, Sec'y.

HOW NOT TO SPOIL DRINKING WATER.

An exchange asks the question how to prevent the pollution of waters. One of the best remedies known is to keep whisky out.—*Cleveland Plain-Dealer*.

REPORT OF THE PROCEEDINGS
OF THE AMERICAN ASSOCIATION
FOR THE ADVANCEMENT OF PHYSICAL
EDUCATION.

(Specially reported for THE ANNALS OF
HYGIENE.)

The third annual meeting of the American Association for the Advancement of Physical Education was held on the 25th of November in the chapel of the Adelphi Academy in Brooklyn, New York.

The morning session was opened at 10 o'clock with the President, Prof. Edward Hitchcock, A. M., M. D., of Amherst College, in the chair.

The exercises were begun by the Rev. T. De Witt Talmage, who offered an eloquent prayer for muscular Christianity.

The minutes of the last meeting were then read and approved; the annual report of the treasurer, Prof. Hartwell, was received, and then the association proceeded to the election of officers. The following gentlemen were elected officers of the association for the ensuing year: President, William Blaikie, Esq.; Vice-Presidents, D. A. Sargent, M. D., E. P. Twining, M.D., Ph.D.; Secretary, William G. Anderson, M. D.; Treasurer, E. M. Hartwell, M. D., Ph.D.; Council, A. M. Starkloff, M. D., Charles McIntire, Jr., M. D., E. Hitchcock, Jr., M. D.

The retiring President, Prof. Edward Hitchcock, then read a short paper, in which he pointed out the objects of the association, which are: To disseminate knowledge concerning physical education, to improve the methods of physical education, and thus bring about a higher and better standard, so that the average man will in his physical development approximate more nearly to the ideal man; and, third, by means of meetings of the members, to bring those interested

in the subject of physical education into closer relation with each other, and by the interchange of thoughts and experiences to assist each other and incite each one to renewed efforts in the cause. He congratulated the association upon the success which had attended their efforts during the past year. He referred to the pleasure and benefits derived from this coming together of the members, and declared that the exchange of ideas refreshed and invigorated them and rendered them more zealous in the work before them.

He closed by expressing the hope that the association would not only continue as it had begun, but would enlarge its sphere and extend its usefulness, and that the same degree of success would attend the efforts put forth in the future as in the past.

The newly elected President, Mr. William Blaikie of New York, then followed with a short address complimenting the members of the Association upon the success which had thus far attended their efforts for the advancement of physical education, and expressing a hope that they would take into consideration the needs of the pupils in the public schools.

He advocated the teaching of simple elementary physical truths in the public schools, even to the scholars in the youngest classes, and he hoped that some means might be adopted whereby this would be brought about. In his opinion the association had not extended its work as far as it should.

They met together and derived benefit from such association, but the knowledge they gained was confined to a limited circle; only a few, comparatively, were profited. What was needed was the dissemination of this knowledge among the masses; it was necessary not only to teach the students in the colleges and higher

schools, but the millions in the public schools of the country.

We want not so much a nation of athletes as a nation of healthy men and women, especially now when occupations were becoming less physical and more mental, and the way to accomplish this result was to begin with the children in the public schools.

There were now, he believed, some twelve million children attending the public schools throughout the land, and what an immense advantage to the nation it would be if these were instructed in physical truths and developed into healthy men and women.

The Association should endeavor to cover more ground, should extend its influence so as to reach the great mass of children in the public schools; for while physical culture can do much for men, it is in the plastic period of childhood that the best results are attained.

Mr. Blaikie was followed by E. H. FALLOWS, who read a paper upon

PHYSICAL TRAINING IN ELEMENTARY SCHOOLS IN THE UNITED STATES,

after which PROF. C. G. RATHMAN of the N. A. T. B., made a motion that "some means be adopted to introduce physical training in the Elementary Schools of the United States."

In the discussion which followed Profs. Brosius, Culbertson, Metzner, Rathman, Truman J. Backus and Drs. Hunt and Savage took part and all agreed that it was very desirable that physical training should be introduced in the elementary schools, and the suggestion was made that leaflets containing hints on physical culture should be prepared and sent to the different Boards of Health throughout the country, with the suggestion that they should have them printed and distributed among the schools in their districts. The

matter was finally left open for the suggestions of the members, as to the best means of awakening public sentiment upon the subject, these suggestions to be taken up at the next meeting, and meanwhile each one should exert his influence in this regard in his immediate neighborhood.

H. M. STARKLOFF, M.D., reported the work done by the N. A. T. B. during the past year.

This Union dates its existence almost from the time that Germans first made America the goal of their wanderings from their native land, and its societies have ever kept before themselves as their chief task the giving of a thorough physical training to the children of its members.

With this end in view, a convention, held in Pittsburgh in 1856, discussed the question of founding a gymnastic seminary to furnish competent instructors, but it was not until ten years later that the board was able to open the school, and in 1866 a course of instruction was begun in New York.

For a number of years this seminary had no permanent location, but in 1874 it was located in Milwaukee, and has signally flourished ever since.

This association has now 237 societies, with 26,722 members and 18,888 children, who are taught physical culture in halls throughout the land with an apparatus which is valued at more than three million dollars (\$3,000,000). There has been an increase during the year of six societies and 2899 members.

After the reading of this report the meeting adjourned for luncheon.

AFTERNOON SESSION.

The afternoon session was called to order at two o'clock by the President, William Blaikie.

After the election of new members,

which had been postponed in the morning, Professor Seaver offered the following resolutions, which were adopted :

Resolved, That our President be requested to present our views on Physical Culture to the American Teachers' Association, to State Boards, and all Educational Societies so far as we find there is opportunity.

Resolved, That we, as an association, form a committee of the whole to report to our President special opportunities for such presentation of our views.

Resolved, That our influence should permeate downward, and turn the attention in the lower grades of our schools to physical training.

After some discussion over a clause in the laws of the Association relative to the admission of new members, a paper on "Physical Measurements; their Use to the Individual," was read by Dr. Edward Hitchcock, Jr., of Cornell University.

PHYSICAL MEASUREMENTS—THEIR USE TO THE INDIVIDUAL.

BY E. HITCHCOCK, JR. M. D.

Some of us thought a few years ago that the matter of directing our pupils or patients to the securing of a happy physique would resolve itself into a mathematical problem, which might be deduced from a series of measurements.

By means of a carefully prepared table we might be able to tell a man wherein he was deficient, and he would thus be enabled to make up that deficiency.

That no perfect table of this kind has yet been made is due to the fact that to construct such a table requires a very large number of observations, and also that the measurements are difficult to make with that degree of accuracy which is desirable in preparing such a table.

From observations on six hundred individuals I made such a table, and have

therefore some conception of the difficulties in the way.

It was first attempted to make weight the basis of this table, for it was expected that as the weight increased so would all the other anthropometric measurements increase; but this idea was soon found to be fallacious, on account of the variation in the deposits of fat in different individuals.

Another attempt was made, based on the height, and this was successful.

The law broadly stated is that human measurements increase with the height.

That the law should have no deviation was not to be expected, but the deviations were so slight as not to affect the general result in any noticeable degree.

It is only with the aid of such tables as these that we can tell a college student where he is deficient, tell what exercise is best for him, and tell him how much he is above or below the average, and by the use of such tables an individual is enabled to know wherein he is wanting, and what is necessary to bring him up to the standard or average for his height.

Now, having these averages on the desk, it would seem easy to tell an individual if he is above or below the average man of his height, but in practice it is not so easy as it seems in theory.

The difficulties in the way are in taking the different anthropometric measurements correctly. The girth of the chest is a measurement that it is almost impracticable to take with accuracy; in two trials in one case that now occurs to my mind, there was a difference shown of half an inch. Testing the capacity of the lungs is another thing where exactness is very difficult of attainment.

As an example, I may mention a case where after repeated trials the difference was equal to nine-tenths of a liter. Still, when we take a large number and make

our measurements carefully, we can deduce an average which is sufficiently correct to enable us to apply our work to the individual, and with care in our examinations we can always approach the truth, and with that we must be content until by collecting an immense number of observations we are enabled to attain a greater accuracy. And yet, in this collection of statistics, from observations made by many observers, there are apt to be many inaccuracies, because while following the same rules for these anthropometric measures, errors are very liable to be made, as no two persons will measure the same man and obtain identical results, and therefore it is as hard to diagnose correctly a man's standard from measurements made by another examiner as it is to tell a patient's disease from a description of his symptoms by another person. In taking these measurements by another person the personal equation is also lost; it does not appear in the history of the case.

In my work on this table another trouble that met me was what seems to be the entire unreliability of the test for the strength of the lungs. While one individual uses the instrument as it was intended he should, another does not seem to be able to comprehend it and use it correctly.

If this is true, that the test is unreliable, then the final computation of the total strength must be wrong. From my experiments any attempt to measure the chest struck me like trying to measure an inflated balloon. I was somewhat disappointed in the Hemingway chart in several particulars, as from it I had expected considerable aid in the construction of my own tables. No figures in the chart are shown on which it is based, but the average is indicated by a red line across its face. Although no figures are

given on which the position of the red line across its face is based it is attractive, and I am looking for a second chart, for there is a ray of hope attached to this little line; it looks like an honest line.

The practical impossibility of securing anthropometric measures which are absolutely correct must, I think, have been one of the difficulties in the way of the authors of the Hemingway chart, for if six examiners should measure the same man independently of each other and send the results to the Hemingway chart, no two would be found alike.

In this connection another method of graphic delineation may be used; if the average measures of all men of one height be taken and compared with each other the average man might be reduced, and then, on a table giving these averages we might, with a pen stroke, indicate the typical man's measurements.

In this compiling of statistics we must get statistics from a large number, and covering a long period of time, in order to obtain a table of the highest value.

In tables that have been constructed the statistics from which they have been compiled have been taken during too short a time, and from too small a number, and yet in a large collection of statistics obtained from various sources there is a fault which sometimes creeps in the work, and that is the personal bias of the examiner, who perhaps desires to show some particular thing or prove some theory of his own.

It is not intended in this paper to point out how we may with greater accuracy measure the vital capacity of a man for instructions to that end are already before us, and to my mind a good judgment, without the record of measurements, is far more useful than the measurements without judgment. The measurements are efficient, but not sufficient, and the danger lies in placing too much reliance in them.

[TO BE CONCLUDED IN OUR NEXT ISSUE.]

AMERICAN PUBLIC HEALTH ASSOCIATION.

The sixteenth annual session of the American Public Health Association was held in Memphis, Tenn., November 8th, 9th, 10th, 11th. The first paper was by Dr. Carl H. Horsch, of Dover, N. H., on

"THE NECESSITY OF BURIAL PERMITS AND INSPECTION OF BODIES OF DECEASED PERSONS."

Dr. Horsch began by defining the necessarily peculiar population of this great country, which is an aggregation of people from all civilized and also from uncivilized nations. The forefathers, deeply engrossed in vital points for the establishment of a free nation and its subsistence, had only a small amount of time for the development of arts, science and state medicine. He then took up the efforts of ancients to guard against premature burial, following it closely, but briefly, up to the present time. Among the first to introduce the burial permit system in this country was Dr. Granville P. Conn, President of the State Board of Health of New Hampshire, the City Council of Dover adopting the suggestion and passing necessary amendments to the city ordinances. Continuing, the essayist read: "The inspection and examination of the bodies of deceased persons is necessary for the following reasons: (1.) It is the best safe-guard against the possibility of premature burial, and also that the apparently dead may not be placed in cold rooms or on ice and frozen to death. (2.) Cases of concealed contagious and infectious diseases will be detected, and an epidemic may be averted. (3.) Murder and suicide may be

detected, and if cremation, the surest method for the destruction of disease germs is generally established, there will be also less danger that the body of a murdered person will be cremated, and the crime concealed. (4.) Life insurance frauds may be prevented. (5.) Where the fear exists of being buried alive, the family physician can overcome that fear by that examination, and his assurance that the loved one is dead. (6.) In order to sign a certificate for a burial permit legally, that inspection gives the most important evidence. If a physician gives his signature to such a certificate, without seeing the body, he may be brought in the following unpleasant position: He is called into court, the certificate is laid before him, the question asked, did you sign that certificate? Answer: Yes. Did you know that the person was dead? The only answer could be, the undertaker or somebody informed me. Then the culprit is brought before him and the fact revealed that he indirectly aided a criminal who tried to defraud a life insurance company.

The gentleman closed by citing nearly all known methods whereby lingering sparks of life in a supposed corpse might be rekindled, and the great rejoicing caused among humanity that the time had come when state medicine can and does receive more attention.

"THE ORIGIN OF SOME DISEASES," AND "THE PREVENTION OF MYCOPHYTIC DISEASES BY INDIVIDUAL PROPHYLAXIS,"

by Ezra M. Hunt, M.D., Secretary State Board of Health, New Jersey, were the titles of two papers next read. He showed how the study of epidemiology had enlarged the number of contagious diseases, and now showed that many diseases once regarded as constitutional or septic were

in reality specific and pathogenic, or mostly parasitic. The prevention and limitation of this class of maladies must ever, therefore, largely occupy the attention of all those who study the causes, the courses and the results of disease. The essayist then took up the following practical results :

"1. The study of parasites, or germs as they are called, is only one of the methods of informing ourselves as to the phenomena of disease, and in itself is not likely to be the key to rational and successful treatment.

"2. Our attention should be directed, far more than now, to the study of conditions and circumstances under which new forms appear; to the influence of persons and surroundings, instead of the mere finding of a specific form. The latter would, of course, be most valuable as one of the facts in the chain of evidence, but we would not, as now, seek so much to look to it as the cause of disease as to inquire what conditions have caused this or that particular microphyte to be present.

"3. We would be able to account for the occasional occurrence of a disease independent of any previous case, and for changing types of disease and new diseases, and would come to treat diseases less by their names and more in view of their type and the effect of surroundings upon them.

"4. The tendency of all this is to magnify the importance of close observation, and to lead us to feel that success in warding off disease, and in treating it when it appears, depends mostly upon close observation and that experience which is derived from actual practice."

THE PREVENTION OF DISEASES.

Dr. Hunt took the ground that the experiments and successes of Jenner and Pasteur demonstrated the wisdom of inoculation, and he held it to be also a

demonstrated fact that the blood may be so charged with antidotal agents as to give the individual practical immunity against pestilence. In closing Dr. Hunt said :

"With this new evidence I believe the time has come for a thorough testing, both by the practitioner and the biological investigator, of this new method of preventing and controlling disease. There are now many who believe that the real action of some of our most successful remedies is just this: The mitigation or prevention of a microphytic disease does not necessarily mean the destruction of the organism, but its inhibition in loco, or the modification of its chemical action on the tissues or its products so as to render it harmless. It is a part of that antiseptic medication which Prof. Yeo, Prof. Brunton and many others recognize as steadily gaining ground for approval.

"If in an individual case of exposure, or an outbreak in a family or neighborhood, this kind of prophylaxis is available, it is easy to forecast the wonderful beneficence of the result. If, for instance, in an outbreak of diphtheria in a family, or in a neighborhood, we can put all persons exposed for a few days upon a prophylactic treatment, or if in the first outbreak of cholera in a locality all exposed persons can be rapidly brought under the inhibitive effect of a prophylactic administered promptly and cautiously, we will have in our possession a mode for the limitation or prevention of epidemics far more likely to have practical application than any system which involves the cutting of the skin or the introduction in any form of the actual virus of the disease. At any rate, with two such modes of defence at hand, we might hopefully expect to substitute the word sporadic for epidemic, and to bring many a vagrant pestilence within the range

of our control. The present age of advancing medical art will be rendered still more notable if it can be found that simple and active medication on the outbreak of any communicable disease will protect all those exposed thereto from the contagion, or so modify its effect as to make the attack benign."

At the conclusion of Dr. Hunt's paper the report of the committee on disinfectants was heard.

DISCUSSION.

DR. BRODIE, OF MICHIGAN.—This paper, that is the first part of it, read by my friend, Dr. Hunt, has very much interested me. Its interest lies in the fact of the want of knowledge of the causation of disease. If we could understand the cause of disease, I think what might follow in reference to its prophylaxis and treatment would be very easy. It is very difficult, when scarlet fever and small-pox breaks out in the community, to know where it comes from and its causes. I've always held the doctrine that there was always a first cause, of course; but I can conceive where scarlet fever or diphtheria may break out in a community without necessarily being carried by contact. I've always believed strongly in the influence of atmosphere, accompanied by local and other conditions, in the production of disease, and I believe that circumstances may arise under which scarlet fever can arise in a community without contagion with any other town, place, or individual. I cannot explain to you how I arrive at that conclusion, or give the facts that make me think so; but yet, on observation, not only of my own, but of other gentlemen, distinguished gentlemen, in years gone by, I've held that to be the case. This paper points to very much the same conclusion, and rather pleased me; because it conveys the idea that I just stated, about the origin

of diseases. We may have, for instance, typhoid fever. Now in Michigan, my friend, Dr. Baker, and many others disagree with me, and put down a certain class of diseases as typhoid fever. I've not seen any typhoid fever in Michigan for the last ten or fifteen years—what I call typhoid fever. The disease there called typhoid fever, lacks a great many of the conditions of typhoid fever as described by Bartlett and Louis, and according to my own observation; yet contains and retains several of the same conditions. Hence I think its a mis-nomer, when a disease is called by the name of the original disease, and I think it misleads the people and has a bad effect on sanitation to so consider it.

DR. BELL.—I have but a single word to say in regard to Dr. Hunt's first paper, the supposed hybridism of yellow fever. I am satisfied that the earliest history of it we receive as credible corresponds to the latest description we can get of it, whether in Africa or the West Indies. A good while ago, I may call it, almost thirty years ago, I had opportunities of seeing myself yellow fever as it occurred in the Gulf and as it occurred in Africa, not long thereafter. It appears to be the same disease, which I think accords with other observers; and all the history I've ever read of it, from what I regard the best authorities—the English on the coast of Africa—is perfectly consistent with the earliest introduction we have of it in the West Indies. And from its continuous similarity, I may say, its exact conditions, according to all the descriptions we've been able to get, I'm unable to see any ground-work whatever for the supposition that its a hybrid in any sense. If there is any disease we encounter that has pathognomonic symptoms, by which we can certainly distinguish and characterize it, after having once become familiar with it, it is yellow

fever. It is as free from any evidence of hybridism with any other disease as any I have encountered.

I would say, in regard to the second paper, some twenty-five or thirty years ago, when I was in service in some of the worst climates in the world, some of these very ones to which I have alluded, on the Spanish main and on the coast of Africa, where I had a great deal to do with the worst forms of malarial and pernicious fevers, I tried to my satisfaction the possible preventive effects of quinine. I then concluded that to give quinine to well persons was a very easy way of making them sick, and that the best preventive was regularity of life and abstinence from stimulants. They resisted much better than those to whom I administered quinine and arsenic. Only about one month ago I met the Surgeon-in-Chief of the Panama Canal Company, Dr. Charles Williamson, formerly of the United States Navy, an exceedingly prominent practitioner and a keen observer. I entered into conversation with him about the mortality among the operatives. He said it was caused by quinine and whiskey. I said, "can you separate the two?" He said there were some persons who did not take whiskey, but the great mortality was due to the fact that they had inculcated in them before going there that they must take quinine and whiskey. He attributed the great mortality to that treatment, before they had any malarial disease. I asked him, in his own person, during three years' residence in one of the most deadly places in the Tropics, if he ever took quinine or anything else? He said, "Never;" that he had not been sick during his three years' residence there; and that other persons who had lived as he had lived, *i. e.*, who had taken no prophylactics except to take good care of themselves, were the healthy people in

that climate. My own observations in the Tropics, for six or seven years, and among different people in Africa and America, I felt were fully confirmed by his statements, in as much as my observations antedated his in that particular. I have not heard anything through Dr. Hunt's paper, or the authorities quoted, that leads me to change my opinion of the mischievous effects of well people taking medicine under any circumstances.

DR. AMES.—I remember some years ago it was then the fashion with our former executive committee to send out to the old ex-presidents of the association, asking their advice as to the subjects to be discussed, and addressing a note of that character to old Dr. Snow, asking his opinion as to the desirable topics for the next meeting. He replied: "I think we had better take one year to unteach the fallacies we have taught." In listening to the very definite propositions of my friend, Dr. Hunt, in his first paper as to the overthrow of the theory of the sterility of hybrids, I thought that perhaps we had arrived at that year, and that Dr. Snow's suggestion was finding its fulfillment. I am thankful to Dr. Bruer for having at least put the interrogation point in regard to that subject. I confess a paucity of knowledge myself upon it, my personal information being confined to the small experiments I made some years ago in my own conservatory in hybridization of plants; but I must admit that I am not ready to so definitely state that the idea of greater sterility in hybrids has been disproved. I think we may be thankful for the broad range of the suggestion he throws out, as for an outlining in somewhat definite form, of what perhaps might be termed an inquiry into the philosophical basis of disease; and for that I am certainly grateful, as I am for any light on any line, even which I am

not ready to accept. Still I think it would hardly be wise for us to allow a paper to go upon record in such a way as to put this association in the position of absolutely agreeing with that paper, to the overthrow of a theory upon which so much is based. For my own part, I can but believe that any philosophical basis of disease must rest upon a very thorough law; and if it is a law, I should be slow to believe that what certainly has little effect and strength in the animal kingdom can be sure of the same workings in even the lower forms of plant life. While I am free to admit that there is a greater fertility of hybrids in the lower forms of plant life than there can be in the higher forms of the vegetable and animal kingdom, I should be slow to adopt the idea that the greater sterility of hybrids, as a theory, was completely overthrown.

DR. HEWITT, of Minnesota.—I for one, should be very happy, as the executive officer of a state board which had a great deal to do with dealing with this matter, if I could believe that we had got far enough along yet to suggest a specific prophylaxis for disease. My office is full of suggestions of that sort. We have several remedies in which the basis is turpentine, which bring in a large income to their venders. Our arrangements are such that all reports come to our office, and there is hardly a report in which they don't constantly complain that the belief that there is such a thing as taking medicine while you are well to keep from getting sick, has proven a bar to our progress. The belief that you can take a little dose beforehand and needn't take the disease at all. I remember a few years ago when we had the largest outbreak of small-pox in Sterns county. It was a thinly settled county and no physicians practicing there; they believed in specifics that had something in them that prevented the occur-

rence of the trouble; and therefore they didn't any of them think they had small-pox until over a hundred cases had occurred, and when I got there I found ten or fifteen townships permeated with the poison, and all the intelligent men believed that a one-millionth solution, touched to the tongue of a visitor, was sufficient to prevent the spread of the disease. One of the strongest bars, I tell you, and I speak from an experience of twenty years as the health officer of our state—one of the strongest bars we have to meet, is the belief that we or somebody else can provide them with a specific which does away with all necessity for cleanliness, or anything in the shape of common sense. It is one of the strongest bars that stands in my way as a practical officer. I do not wish to be understood that I do not yearn, just as heartily as my friend Dr. Hunt, and all other executive officers, for something that would enable us to deal with this disease in that way: but we must be very careful, indeed, especially with respect to that damnable disorder, diphtheria. It is this disease of all diseases, that's dealt with by specifics—that can be prevented by something in contact with the visible sign of it. It's the disease of all diseases that can't be dealt with in any such way! [Applause.] We have two works to do, and we must distinctly differentiate the two. The first of those works is ideal, the hope, the anticipation, the expectation of the future. That's what sustains us. If we didn't have the expectation that we should do better and be better hereafter, there would be a good deal of despair; but it's just such anticipation that encourages and sustains us in our every hour of work, but we mustn't carry the one too far into the territory of other. I believe heartily in the pursuit of the one as I do in the practice of the other; and when the pursuit of the one

shall put into our hands a tangible means for use in the other, I say, "God be thanked, and let's try again!"

DR. BAKER, of MICHIGAN: I wish to endorse what Dr. Hewitt has said, very strongly. I think we are all indebted to Dr. Hunt for his able paper, and the hypotheses are very interesting, but I can't go the length of my friend, Dr. Brodie, in making that a working hypothesis. I think we must draw the line there. It is following that hypothesis of the *De Novo* origin of disease that has given us a thousand deaths from typhoid fever in our state in a year. That's the sort of thing we get from acting on that as a working hypothesis. We ought not to work on that line at all. I think we want to do the reverse of that; find where the disease came from; find where it's likely to come from; and teach the people how to prevent it, and in that way we are doing some work in Michigan, as they are in Minnesota, in preventing diphtheria and scarlet fever and typhoid fever. I can understand why they don't have typhoid fever in Detroit, where Dr. Brodie comes from—they have a good water supply; and we can get a good supply if we will not teach the *De Novo* origin of typhoid fever, but teach that it is usually traced to bad water. The working hypothesis we have now is a useful one, and the hypotheses given to us by our friends here may be useful sometime in the future. But I think we should not take it up and work on it to day; it's what we've been doing in the past.

When people think that diseases like typhoid fever and diphtheria come to them from an unknown source, they do nothing; but when we teach them they can isolate their cases and disinfect and save hundreds of lives a year, I think we ought to continue in the same line.

DR. BAILY, of Louisville, Ky.—There's

so much of this subject I know so little about, I'll not speak very long. First, in regard to the fertility of hybrids. This may be so—what Dr. Hunt states—in regard to the lower forms of animal and vegetable life, but if it is so in full, then I shall go home and advise my neighbors to raise colts from their mules, which they have not been able to do heretofore. [Laughter.]

I want to say that I admire exceedingly the tendency of the paper. It is seeking after what we want, where frequently we are unable to determine intelligently, and reasoning by analogy, even from this inferior order of fertility, hoping to gain a specific organism by development, that will account for diseases not heretofore accounted for, and also for the influence of environment in cases *de novo*. I think Dr. Bell can tell us something of the influence of environment. But I want to say that I think Dr. Hunt possibly may have gone beyond really his own convictions, seeking after something he hopes may be true, and in that way, eventually, good may come out of it. I am pleased with the paper.

DR. HUNT, of New Jersey.—I should have been exceedingly disappointed if this paper had not called out some discussion; and I thought in proposing the subject of the paper, I was very careful not to commit myself to any theory. I entertain a hypothesis a great while before I convert it into a theory. As to the first paper—one point has been entirely over-looked; that of the suggestion of the change that takes place in disease by evolution, and the whole attention seems to have fastened upon the question of the fertility of hybrids. I was quite aware that because there are mules and multitudes of physicians and men that know more about mules than they do about the infinitesimal botany of disease, that proposition would be disputed.

When preparing this paper, I first wrote to Prof. Asa Gray. He was out of the country. I then went to Prof. McCloskey, of Princeton, and spent a day with him and got his opinions. I then went to Prof. Epgar and submitted to him what was said on the subject of hybrids; and I then went to Mr. Mahon, the editor of a monthly of Philadelphia, and who, I was told in New York, was an excellent authority upon that point, and what I said on all the three points is in quotation marks from those three gentlemen, so that I do not propose to discuss the question as to whether hybrids are fertile. I knew it would bring out a difference of view, and in looking to my manuscript, I see that I say, "but so numerous are the exceptions, and so abundant have been the results of new cultivation, that the view that most hybrids are sterile, is fully disproved." That is true. That does not mean to say that all hybrids are fertile; but it does mean to say that non-fertility among hybrids is the exception; fertility among hybrids is the rule; and I inquired definitely into the fixity of the fertility, and find that many of the hybrids do come to be fixed in their fertility. Next, as to the danger of the De Novo origin of disease. Now, sir, it is always dangerous to fasten too much upon one idea. There are two parallel bars on which the progress of sanitation runs as much as the rear car on a railroad. One is isolation; if I ever should say anything in a paper that would lead to a want of caution, I should be sorry; but I should also be sorry if I were not teaching that filthy surroundings, the condition of the person, may propagate disease, and sometimes there is a possibility that they may result in the origin of diseases. I know, this about diphtheria and scarlet fever and about typhoid fever that makes me not ashamed, that Murchison

believed that it is of de novo origin, in the sense in which evolution and hybridism may come to explain the thing, and therefore let it be understood only as a hypothesis. But it is my business to set myself to thinking and my brethren to thinking in right directions. That is all I have attempted to do. I have not accepted a theory, nor do I want you to accept it, but I do want these propositions to elicit your kind attention.

As to the other point, prophylaxis: Is there any disagreement that we do not want men and women and children running up and down the country with all sorts of nostrums as antidotes for disease? But does that prove when I am going into a malarial district, it is bad for me to take small doses of quinine without whiskey? For three years the government of Great Britain has kept Dr. Cash at work, and the experiments made show the beneficial effects of the prophylactic treatment. And shall we not accept such pieces of proof, even if they are little pieces; shall they not put us on the *qui vive* to be after these things, not accepting them as proven, but as possible facts that are well worthy of our attention? That is all I have to say.

(TO BE CONTINUED.)

HANDSOME CALENDAR FOR 1888.

One of the most exquisite pieces of engraving that we have been privileged to see recently is the calendar issued by Doliber, Goodale & Co., of Boston, the manufacturers of "Mellin's Food." It is not disfigured with advertising matter, and would be an ornament in the best furnished of physicians' offices. It will be sent to any of our readers on receipt of ten cents in stamps. Send for it, and say you read this journal.

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Editorial.

POPULAR LECTURES ON HYGIENE.

At a meeting of the State Board of Health of Pennsylvania, held November 30, it was resolved, upon motion of Dr. Lee, that a special committee consisting of Drs. G. G. Groff, of Lewisburg, and Joseph F. Edwards, of Philadelphia, be appointed to arrange for the delivery of popular lectures on hygiene in the towns throughout our State. The object aimed at is popular education in matters pertaining to hygiene. We would bespeak the kindly influence and coöperation of our readers in the work of this committee, and would ask any of our subscribers who feel that such a lecture would be well received in their localities, to kindly correspond with the editor of this journal, with the view of having the lecture there delivered. Such coöperation will be highly appreciated by the Board.

OUR REPORTS.

The report which we elsewhere publish in this issue, is a most striking proof of the value of the reports which we have been printing and will continue to publish. Here we find an analysis of a water that would make it the purest of waters, furnished by a chemist *who is employed to make his report by the manufacturers*, while when examined by a chemist who knows not what he is investigating, the published analysis is proven to be erroneous. We do not pretend to account for this discrepancy (though we *know* that our report is correct), but we can imagine how a manufacturer could send to a chemist for analysis a very different article from that which he puts upon the market for sale. We would again say what we have said before, that our own reports are always thoroughly impartial and reliable, and that our chemist never knows at the time of the investigation whose article he is analyzing.

CHOLERA.

As we intimated in our last issue, the country is not at all likely to be afflicted with a cholera epidemic at the present time.

After a detention of some two months or more, the passengers from the infected steamer "Alesia" have been allowed to land and disperse to their several destinations, and, for the time being, the "Cholera Scare" is a thing of the past.

There has been considerable criticism, of a very savage nature, in some instances, of the New York Quarantine officials in connection with the advent of cholera. It would seem to us that this criticism has been rather too severe. "The proof of the pudding is in the eating," and, in this instance, the proof of the efficiency of the New York Quarantine Service, it

seems to us, is to be found in the fact that the disease has not spread. Of course we do not mean to say that the quarantine service of New York is beyond criticism, for in several points it could certainly be improved, but what we do think is that it does not deserve the full measure of criticism it has received.

NATIONAL OR STATE QUARANTINE.

The hygieno-political question that is being most actively discussed by sanitarians at the present time, is in reference to the substitution of National for State supervision of quarantine.

Of course, there are to be found, in connection with this question, as with all others, arguments on both sides; but it would seem to us that the weight of argument tends toward national supervision of quarantine. It can hardly be expected that such unanimity of sentiment will be found as would induce the authorities of one State to consider the interests of another, should they, in any way, conflict with those of the former; and as the introduction of contagious diseases to the country through any one port of entry is liable to contaminate, not that one port alone, but the *whole country*, then would it seem that the *whole country*, through its central representatives, at Washington, should have the control and direction of the means of preventing the introduction of such diseases.

As matters stand at present, it seems that the Supervising Surgeon-General of the Marine Hospital Service, is vested with the power of assuming a certain control of local quarantines, *but only at the request of the State authorities*, which request, for obvious reasons, is not likely often to be made. It would seem to us that the same arguments that induced the

National Government to assume control of the postal service, and that have been advanced for national supervision of the telegraph service, might be equally well used as reasons why national should supplant State quarantine.

This quarantine need not be necessarily a quarantine of detention for all vessels from an infected port; indeed, it was the sense of the recent International Congress of Hygiene that such should be abolished, substituting therefor a system of medical inspection of all in-coming vessels; but, we would add, wherever disease of a contagious nature is found on any such vessel, then should the quarantine be most rigidly enforced, and then should all measures of disinfection be most thoroughly employed, for which suitable apparatus is a necessity.

Why would it not be well for congress to place the whole matter of quarantine in the hands of either the Marine Hospital Service or of the Navy; from either of these departments a suitable medical officer could be detailed for quarantine duty at each of our ports of entry; who, not owing his post to political favor, could afford to be fearless, honest, impartial and adamant in the performance of his duty.

There is this much, anyhow, that can be said against the system of State Quarantine. In a recent conversation with the late Port Physician of this city we were told that the captain of an ocean steamer, who has travelled widely, made the remark that, with the single exception of Louisiana, there was no port in this country with a quarantine worthy of the name.

State Quarantine is, therefore, evidently a failure; granting this, why not try the other alternative, it certainly could not make matters worse and might make them much better.

Notes and Comments.

BARNUM ON TEMPERANCE.

The veteran showman, P. T. Barnum, thus writes in *The Press*:

"I should have been in my grave twenty or thirty years ago if I had not quit drinking intoxicating liquors, as I did, in 1847. I had contracted the habit, had built up a blind, unnatural appetite for strong drinks, and really liked the taste of every kind of liquor—though I suspect I liked the effects still better—began to grow careless and "slothful in business," and put off until next week what I ought to have done to-day. Fortunately, I discovered that the habit was destroying my health and my worldly prospects, and by a most determined will power I conquered the powerful appetite which I had acquired for intoxicants and broke it forever. I knew that habit was second nature, and that the unnatural appetite for strong drinks was stronger than nature itself, for every glass of liquor drank increased the desire for another glass, and so on *ad libitum*, and, therefore, to have conquered such a fearful habit was the saving of my life and all that was worth living for.

"When I found myself secure from falling back into the whirlpool of intoxicants, I felt as a shipwrecked person must feel when his life is barely saved by the life-boat, while many of his fellow passengers were still struggling in the waves. Being saved himself, he is excitedly anxious to save others. I felt so overjoyed at being snatched from a habit which was surely dragging me down to misery and death, that I found my greatest pleasure consisted in circulating the temperance pledge, giving temperance lectures free of charge all over the country, and using every effort in my power to enlighten

public sentiment in regard to the fearful delusion of strong drink.

"I particularly urged young men and young women, as I now do, to start right in life, to avoid this greatest evil in the land—because it is the parent of nearly every other evil known, and is sure to utterly destroy nine-tenths of those who form the drinking habit. I begged them to touch not a single drop, because, like opium, morphine and other narcotics, the drinking of liquor calls for more, more and more, to produce the same effect that a little produced at first, and thus an artificial and unnatural appetite was created that proved irresistible in a great majority of cases. I showed the youth of this country that their health, happiness and success in life, as well as of their posterity, depended upon whether they started life's journey on whiskey, beer and other brain-muddlers, or on cold water, nature's beverage, which gives the clear brain, the firm hand, the strong resolution and the noble ambition to succeed in life financially and morally.

"I am glad to know that I have started thousands of young persons on the right track, and that their example will save hundreds of thousands of their posterity and fellow beings. It is one of the greatest pleasures of the evening of my life that I can look back and see the multitude of young married men, who were ruining themselves and families by this social, delusive and absolutely fatal habit of dram-drinking, whom I have been able to convince that they were on the wrong track, and to induce them to switch off and take the temperance track for life. Many a wife and son and daughter have clasped me by the hand and with streaming eyes have thanked me for having saved them from misery and degradation, and saving their father and husband.

"Young married men in Bridgeport, who were my tenants, I have induced to abandon the use of liquor and tobacco on condition that I would build and sell them a house on credit to be paid for by installments. Numbers of such men with growing families have in a few years owned the houses they lived in, clear from debt, they having saved the money by cutting off their rum and tobacco expenses, and earned more money by their renewed energy, strength and ambition. There is not one redeeming quality in the liquor drinking habit. It does no possible good and it inflicts all manner of evil upon its victim, his family and friends. It is the most degrading, poverty-breeding and utterly destructive infatuation that ever paralyzed the hopes, comforts and characters of the people of this otherwise blessed America."

FREE LIBRARIES AND CONTAGION.

No public institution is so fortunate as not to be liable to misuse. It is not, therefore, to be wondered at that the free library, notwithstanding the benefits it undoubtedly confers, has been found to have its disadvantages. A complaint has been laid against it that it may, and sometimes does, become the means of carrying infection. A correspondent, writing in a London journal, quotes what seems to have been a case directly in point. A child obtained from the library a book which had just come from a house in which there was scarlet fever, and two days later was taken ill with this disease. The period of incubation in scarlatina is somewhat variable, but it is not incompatible with the view that the book was here the medium of infection. Whether the disease could not have been traced to any other possible source is uncertain, but at all events, this case indicates a

danger which appears to be inseparable from the free library system. The only possible safeguards are to be found—firstly, in a compulsory notification of infectious disease to the librarian, and secondly, the subjection of every returned book about which there is any doubt on the score of contagion to a process of disinfective fumigation. In this connection reference may be made to an incident recorded in a Russian periodical. Typhus fever has recently been very prevalent in Sebastopol, and it is stated that its ravages were to some extent controlled by the judicious action of the librarian of the town library, who appealed earnestly to the subscribers to cease temporarily from changing books in case of the fever appearing in their respective families. In this way the frequenters of the library and the readers of the books lent out, as well as the staff of servants and librarians, have been saved from infection.

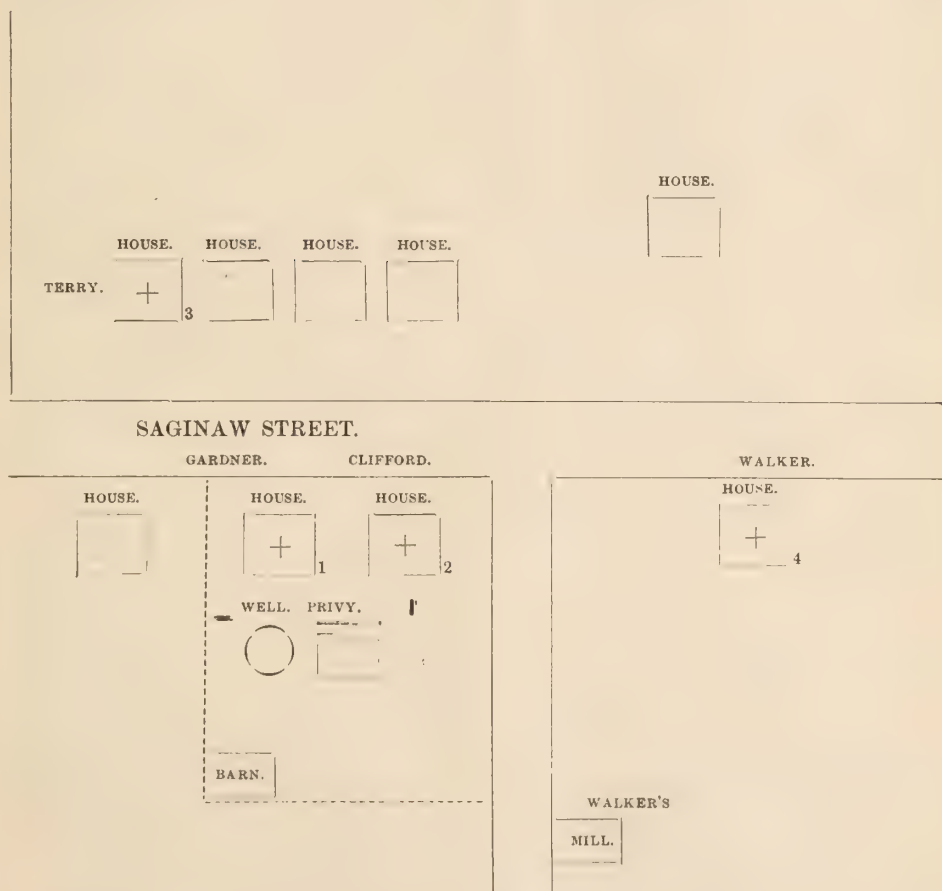
A GOOD QUARANTINE MASTER.

Robert M. Newhard, of Fernwood, Del. Co., was recently appointed Quarantine Master of this Port by Governor Beaver. The other day a vessel was coming up the Delaware and friend Newhard went out to interview it. She was from a non-infected port and her bill of health was all right, but she had on board the rescued crew of a wrecked vessel that had sailed long before from an infected Italian port. This vessel had been long at sea and no contagious sickness had developed, yet wise-headed Newhard refused to allow her to proceed to this city until all the clothing of this rescued crew had been thoroughly disinfected. It gives us a sense of security to feel that we have such a watchful officer down on Tinicum Island. We congratulate you on your appreciation of the great trust confided to you, Mr. Newhard.

HOW TYPHOID IS SPREAD, AND
HOW IT MAY BE PREVENTED.

Dr. H. McCall, of Lapeer, Mich., thus reports to the Michigan State Board of Health: Enclosed find a short report of typhoid cases occurring in the southern part of our town. Houses marked + are the ones in which cases occurred. Nos. 1, 2, 3 and 4, order of outbreak. Cases in 2, 3 and 4, traceable to water from well in rear of No. 1.

No care was exercised with stools in the way of disinfection, but they were thrown into privy vault in rear of house, and in close proximity to well. Wash water was thrown on the surface of the ground, which was very dry at the time. About the 7th or 8th of September, a copious rain fell, and soaked the sandy soil; and on the 14th, William Gardner and wife, father and mother of Myron, and E. D. Gardner, a brother (who was a student at my office), and who boarded at home,



About September 1st, 1887, Myron Gardner, railroad employee, came from the South sick with fever to his father's home, No. 1 on diagram. His case was supposed to be malarial.

were attacked with fever. On this day I got home from Washington, and found four of them down with a severe type of typhoid fever; and in two weeks Myron's wife and child were attacked. Also, a

child across the street, at Terry's, who had used water from the Gardner well. About the same time, three cases in the Clifford house, south of Gardner's, who also used water from the Gardner well. None of the people from either of these houses were in the Gardner house. In the Walker house, still further south, one case has occurred, and I was at a loss to account for this case till a few days ago, when the young man said that at the mill where he was working they had used the Gardner water for a few days, owing to disarrangement of the pump at the mill. Two others of the mill-hands, Anderson and Lester, who used the same water, were attacked about the same time. Lester is now convalescent; Anderson is dead, as also the child at Terry's. When I took charge of the case, I ordered the discontinuance of water from the Gardner well and the disinfection of the stools; and no new cases are now reported. People who assisted to take care of the Gardner and other families, and who used water from other sources, have not been attacked. Clearly, Myron Gardner brought the fever home, the well became infected after the first rain from slops and privy, and the other cases got their seed from the water.

CHOOSING HOUSES.

In selecting a house, or a site for a new one, remember (says *Chamber's Journal*) that where the sun will shine on the house for some hours a day one element of good is secured, especially if the sunshine enters at the windows of the living rooms or rooms most used during the daytime. After the aspect has been found to be suitable, and that a plentiful supply of sun and air is insured, attention should be given to the general position and construction of the house. If the ground is

all porous, a layer of concrete not less than six inches thick, and composed of cement or lime and broken bricks or gravel, should be spread over the whole of the ground covered by the building. This will prevent the passage of ground air up through the floors. Air will travel through the ground for some distance, and, as it invariably becomes contaminated by taking up carbonic acid gas in its passage, it is not suitable for inhaling. The house acts as a sucker on the ground; and if, unfortunately, the site is one on "made" ground—that is, composed of all the refuse of a town—the ground air becomes the medium of disease. No houses should be built without a well ventilated air space between the earth and the ground floor, especially if the layer of concrete on the surface is omitted. The walls should be built of good hard-burnt bricks, or non-porous stones set in lime or cement mortar. Common under-burnt bricks or porous stones hold moisture, which evaporates with the rise in temperature and so chills the air in the house. If the bricks or stones of the walls are suspected of holding moisture the whole of the external surfaces should be covered with cement, or tiled or slated above. The foundations of the walls should rest on thick beds of concrete bedded in the earth; and to prevent the ground damp rising up the walls a damp-proof course of slates, in cement, or a bed of asphalt should be laid in the full thickness or width of the wall just above the ground line. Dryness in this climate is so essential to health that any building which in its floors, walls, or roof sins by admitting moisture, should be rejected as a place of residence by those who value their health. In tropical climates buildings are constructed to keep out the heat; but here we build to retain the heat and keep out the cold.

GOOD ADVICE FOR "LITTLE WOMEN."

Louisa M. Alcott, in an excellent article in the *Ladies' Home Journal*, gives this good advice for "little women": "Girls, don't be in haste to wed. Build up healthy bodies by good food, plenty of exercise and sleep. Learn all the useful household arts before you attempt to make a home. Cultivate your minds with the best books that you may be able to teach your children much that school training alone will never give you. Choose your amusements wisely, for youth must have pleasure, but need not waste itself in harmful frivolity. Above all, select your friends with care. Avoid girls who live only for fashion, flirtation and enjoyment, and use the privilege all women may claim to decline the acquaintance of young men whose lives will not bear inspection by the innocent eyes of women. Let no delusion of wealth, rank, comeliness or love tempt you to trust your happiness to such an one. Watch and wait till the true lover comes, even if it be all your life, for single blessedness is far better than double misery and wrong. Spinsters are a very useful, happy, independent race, never more so than now when all professions are open to them, and honor, fame and fortune are bravely won by many gifted members of the sisterhood. Set your standard high and live up to it, sure that the reward will come here or hereafter, and in the form best suited to your real needs."

GENEALOGY OF NEUROTIC FAMILIES.

From the *Medical Record* we note that Dr. M. J. Ségla laid before the Medico-Psychological Society of Paris (London *Medical Record*) the genealogy of two

neurotic families in which at least twelve members out of thirty-four were deranged in mind. The following sentences contain a conclusion which he is anxious to impress: It has been often remarked that persons with a neurotic heredity often intermarry; this is now generally admitted. What explanation can be given? Are these unions simply the result of chance, or of different social causes (family reasons, considerations of fortune), or are they dictated by a sort of fatality, or natural law? In admitting the possibility of other causes (and it is this which renders the question so difficult) it is insufficient to explain the innumerable cases of convergent heredity, observed by the doctors in all times and countries, and which are only the result of these fatal unions. On the other side, the illegitimate unions which present characters precisely similar are not to be explained by all these particular causes, and are more demonstrative of the fact upon which we insist. Besides, the repetition of the same facts in a single family, in the same generation, and in the following generations, in nearly all the members of these generations, and sometimes even several times in the life of the same individual, seems to us to be a proof of what we advance. In the particular case which we report, this unhealthy attraction which draws persons with neurotic tendencies to each other by a sort of community of ideas and sentiments is the most manifest. It is found again in all the generations, in all the members of each generation, and even several times in the same individual. We find in it also consanguinity, which is on this account the more demonstrative. Moreover, these unions between blood-relations are not rare, and thus create a convergent heredity of the worst description in the descendants.

MANUFACTURING CRIPPLES.

The *cuis de jatte* attract more attention from philanthropists and charitable people in Paris than the blind, the paralytic, or the maimed. They drag themselves along in little cars, and some of them make as much as 10 francs a day by their energetic solicitations of the passers-by. There are even what are called *fabriques* or manufactories of crippled mendicants, just as there are establishments for the training of acrobats and tight-rope dancers; and the miscreants who practice the calling of providing maimed beggars for the Paris market and making capital out of them are more numerous than would be supposed. These people pay 50 or 60 francs for an infirm child to its poor, avaricious, or unfeeling parents. They begin with it when it is about ten years old, and tie its legs underneath its body. The legs are then bandaged with leather thongs, which, after a while, and when there is not much danger of gangrene, are squeezed until the vitality of the nether limbs flows into the body and the child is unable any longer to walk. When this consummation has been arrived at the *cul de jatte* is ready for work in Paris or some other large city.

What the unfortunate creature suffers at the hands of the inhuman monsters who carry on this abominable traffic is worse than anything that could have befallen Smike or Oliver Twist in their darkest days. They are fed on weak soup, and are obliged to ply their trades in the depth of Winter.—*From a Paris Letter.*

THE BATH OF A PERSIAN WOMAN.

The bath takes up a good deal of the time of all Persian women. Even the poorest will attend the Hamman at least once a week. For the lady the bath is

one of the serious affairs of life and takes up daily from two to four hours of her time. It is something more than our idea of a bath. The victim is scraped and rubbed and parboiled. The soles of the feet are pumiced until they are as soft and tender as those of a little child. The hair is thoroughly washed by means of hot water and the saponaceous clay for which Shiraz is celebrated. Then the attendants mix in a brazen bowl the aromatic henna with the requisite amount of lemon juice, till a brown paste of the consistency of gruel is produced, and several handfuls of the repulsive looking compound are smeared over the lady's head. Then the hair, collected into a mass, is bound up in cabbage leaves. Small quantities of the dye are smeared over the eyebrows; the soles of the feet, the toes, the palms of the hands and the finger-tips are also covered with it. And now the lady has to set perfectly still for from one to three hours, till, like a meerscham pipe, she colors; and it is exactly the color obtained on the best specimens of the pipes that is most fashionable among the Persian ladies. Day after day the bath is thronged with women, each sitting perfectly still for the color to "take." But they have their reward, for the henna dyes the hair a beautiful deep warm chestnut; hence gray hair is unknown among Persian ladies.

SUIT FOR DEFECTIVE DRAINAGE.

A novel suit was recently begun in this city which promises to possess much interest for sanitarians. It seems that a certain woman rented a house with the understanding that it was in proper sanitary condition. She subsequently discovered that the drainage was defective, and now brings suit against the landlord for \$5,000 damages. We will watch this case with interest and report the result in a subsequent issue.

TYPHOID FEVER IN MICHIGAN.*

Owing to the greatly diminished rainfall during the spring and summer of 1887, and the consequent lowering of the water in streams, ponds, and wells, a marked increase in the prevalence of typhoid fever was feared, and unusual efforts were put forth by the office of the State Board of Health for the prevention and restriction of the disease. The increase did not take place quite as early as expected, but an examination of the following tables will afford a useful means of comparison between the sickness from typhoid fever by months in 1887, with that of 1886, 1885, and the average for the nine years, 1878-1886. The rainfall for the same periods of time is also shown. The changes in the level of the ground water for the first nine months of 1887 and by months for the two preceding years are also shown.

Average per cent. of reports stating the presence of TYPHOID FEVER by Months in the Nine Years, 1878-86, also by Months in 1885 and 1886, and for the first Nine Months in 1887.

	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. 9 years, 1878-86.....	11	9	7	6	5	6	7	13	20	22	20	15
1885.....	11	7	5	4	3	5	5	6	11	13	16	8
1886.....	6	3	4	3	5	4	5	13	16	16	13	10
1887.....	8	9	7	3	3	5	6	14	23			

RAINFALL IN MICHIGAN.—Average Number of Inches, by Months, for the Nine Years 1878-86, also in 1885 and 1886, and for the first Nine Months of 1887.

	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. 9 years, 1878-86.....	2.07	2.72	2.40	2.59	3.66	4.41	3.55	3.34	3.82	3.56	3.08	2.71
1885.....	2.70	.73	.58	2.47	2.30	6.01	2.52	5.82	3.75	3.08	2.90	2.14
1886.....	3.05	1.72	2.74	2.40	2.58	2.29	1.36	4.21	5.36	1.97	2.35	2.13
1887.....	2.27	4.47	1.18	1.54	2.25	2.76	2.46	1.98	3.12†			

†State Weather Service.

* Abstracted from Report of Michigan State Board of Health.

THE QUARANTINE SERVICE.

The report of Surgeon General Hamilton, of the Marine Hospital Service, says

that the stations at Delaware Breakwater and Cape Charles serve not only as protection to the large cities and states in the immediate vicinity, but through them to the country at large, and the recommendation made in previous reports that these stations be thoroughly equipped with all the modern appliances of quarantine is respectfully renewed. Special appropriations are required to provide additional buildings and wharf facilities. The hospital at the Delaware Breakwater is in better condition than either of the others, but it is out of the question to have first-rate hospitals on such an uncertain basis as that of contingent appropriations. If they are to be maintained at all they should be well built and in such a manner as to insure the highest state of efficiency.

The method practiced in Mexico and Brazil for inoculation against yellow fever is now being investigated by Surgeon

George M. Sternberg. The general opinion of sanitarians, however, has not yet crystallized in favor of inoculation as a preventive of yellow fever. The experiments made on the subject in Havana in 1855 were seemingly as conclusive as

those of to-day, but they did not succeed in securing general adoption, and Dr. Sternberg's report will doubtless provide the necessary data for passing judgment on the efficacy of the method. The report concludes :

"The forthcoming regulations of the Department will contain complete instructions to United States consular officers in regard to prompt notification of the existence of epidemics in foreign countries and of the departure of emigrants and vessels from infected ports. The aid in this matter, heretofore furnished by the Department of State, is very great, but it will be much more under the new regulations. If Congress will only provide for the proper equipment and maintenance of the national quarantines, the sanitary defenses against invasion of epidemic diseases will be greatly strengthened."

HYGIENE AMONG THE ZULUS.

One of the peculiarities of the natives of South Africa (says *The Satellite*) is their aversion to the use of water for external purposes during dry weather, especially when they are in perspiration. They avoid bathing except during heavy rains, when they take advantage of the opportunity for purposes of bodily cleanliness. Their reasons for so doing are that frequent ablutions debilitate the system and render it incapable of withstanding the local climate, and that very frequently baths are followed by malarial fever or cutaneous eruptions over the joints. One can frequently observe the veracity of this assertion, especially as regards the cutaneous eruption, which generally appears in the popliteal space the very day a bath is taken, even during rainy weather. With strict parsimony in the use of water, the Zulus resist remark-

ably the dangers of the climate to which they are exposed. Instead of opening the pores by means of baths, the natives endeavor to close them, on the contrary, by the application of fats over the entire body.

The Zulus lead a frugal life, their food being of the simplest kind. They use but little meat, which they invariably broil. They eat every part of the animal, including the bones, and sometimes even the hide. They make free use of the gall of the animals they eat, to render the meat tender and prevent indigestion, applying a few drops over the morsel they are about to consume. They sleep on mats, the head resting on blocks of wood, which hold it in equilibrium and keep it cool. They rarely suffer from headaches, neuralgia, etc., owing probably to this mode of taking rest, the head not being overheated, as it is among civilized people, by feather pillows.

OLD FOLKS.

We take the following from the *Phila. Times*, Sept. 11:—

Manuel Barriani and his wife, of Matamoros, Mex., recently celebrated the eightieth anniversary of their wedding. The husband is hale and hearty at 102, while his wife enjoys good health at 96.

Aunty Maria Kennedy has just died near Cementville, Ind. She was born 102 years ago, was a negro, and her descendants are three children, twenty grandchildren and thirty-nine great grandchildren.

The oldest man in Kansas, is a negro who is said, "on good authority," to have been born a slave in Fauquier County, Va., November 20, 1775, and is therefore 112 year old. He is an inveterate tobacco chewer, and insists that if he were to leave off he would die.

Mrs. Francis, a widow, residing on the Welsh hills at Tymaen Pyle, England, has attained the age of 107 years, having been born on the 15th of August, 1780. She can thread her needle without using glasses, moves about with ease, and is able to attend to domestic duties.

The Rev. George R. Rogers, of Brooks' Station, Ky., though 96 years old, frequently rides his horse to Louisville and back, a distance of twenty six miles, and he still preaches and marries folks. He served throughout the war of 1812, and draws a pension for that service.

A very remarkable group was recently photographed at Charlottetown. It consisted of six brothers whose united ages amount to 465 years, or an average of $77\frac{1}{2}$ years each, as follows: Charles Stevenson, of Tignish, 86 years; John Stevenson, New Glasgow, 82; Andrew Stevenson, Fredericton, Prince Edward Island, 77; George Stevenson, New Glasgow, 73; Robert Stevenson, Rustico, 67. They are all hale and hearty.

Jeffrey Wilson, who died near Mechanicsburg, Ohio, a few days ago, was born a slave in Virginia in 1773, and had entered on his 115th year when he died. He was a slave for ninety-two years. He had two wives. By the first he became the father of eight children, three of whom are living, the average of their ages being 80 years, the eldest being 87 and the youngest 79 years. By his second wife he had nine children, six of whom are living, their average age being 52 years, the eldest being 58 and the youngest 41. He had seventy six grandchildren, thirteen great-grandchildren, and one great-great-grandchild, his offspring extending through four generations, there being 106 souls. In his veins flowed the blood of three races—white, negro and Indian—and to this fact is attributed his longevity.

PUBLIC DANGER FROM QUESTIONABLE FORMS OF SORE THROAT.

The *Sanitary Inspector* tells us that a young man, whose parents live in Brighton, died in Detroit a few weeks ago after a week's sickness. The attending physician called the disease at various times, "putrid sore throat," "gangrenous sore throat," and "ulcerative tonsillitis." He died of failure of the heart, a common mode of death in diphtheria. The remains were sent to Brighton, and on the casket was a certificate that he died of "heart-clot." As the boy was well known in Brighton, it was proposed that the high school go in a body to his funeral; but the principal of the school and the health officer of the village, suspecting that all was not right, vigorously objected to any children attending the funeral.

About Aug. 1, the lady with whom the boy lived in Detroit, visited the boys parents in Brighton, bringing his clothing that had been left with her. In ten days after her arrival, two children in the family were taken with a malignant form of diphtheria, one dying August 23, and the other, when last heard from, being in great danger.

From the statement of the case there can be little question that the boy died in Detroit of diphtheria. The father says that if his children in Brighton had diphtheria, then his boy in Detroit had diphtheria, "because," he says, "it is the same thing." The members of the family in Detroit have since had sore throats.

THE SECRET OF THE ELIXIR OF LIFE.

The *Lotus*, one of the organs of the Theosophists, has been obliging enough to take all the world into the secret of the elixir of life. This form of the philosopher's stone is, it seems, neither a

drug nor a potion, but a series of maxims the due observance of which will insure you 1000 years of life. According to the inspired writer in the *Lotus*, a human being dies only when his will ceases to be strong enough to keep him alive. Therefore, the first essential to long life is a strong will and a determination not to die, whatever happens. There must be a "permanent and unrelaxing concentration." But beyond that much more is necessary. Every animal desire—even the inclination to eat and drink—must be gradually mastered until at length the living man becomes etherealized. Ambition, affection, anger—indeed, every inclination which is not purely spiritual and contemplative—must be got rid of. The critical moment in the existence of a person who seeks to live for several centuries is the period when, in the ordinary course of nature, other men die, since "every man has an inevitable tendency to repeat the actions of his ancestors." The fewer the "gross and fleshly molecules" in the man's being the better his chance of turning the awkward corner. That once achieved, he is safe.—*St. James Gazette.*

HEALTHFUL MOUNTAIN CLIMBING.

Dr. H. Salzer, of Bedford Springs, Pa., thus writes to the *Philadelphia Times*:

Thinking that it might be interesting to your numerous readers to know how to carry out the cure of mountain climbing I will give my own experience. For instance, we take a moderately steep hill (grade 1-6 or 1-7), ascend at a slow speed 30 or 40 steps a minute, and with strict abstinence from conversation. We start at from one to three minutes before each meal. We increase it daily by one minute until we reach from 20 to 30 minutes before each meal. This will prove quite

different from "doing the mountain injudiciously." Persons who have difficulty in walking up a few steps will in four to six weeks be able to "do big hills." The writer of this, when first trying this treatment last year, when walking fifty steps slowly uphill, found his pulse up to 176 beats a minute, his temperature 103, Fahrenheit. He is now able to ascend the Bedford Spring mountain about 400 feet above the Springs twice in succession three times a day before each meal, without raising his pulse above one hundred beats a minute, and his temperature above the normal (98 or 99). His improvement from a very severe complication of Bright's disease, fatty heart and chronic bronchitis is mostly due to the moderate use of Bedford mineral water, which produces increased secretion without irritation, and to continued mountain climbing in the described manner. This important combination—the mineral water direct from the Spring, a hill with paths and benches, as if laid out for the purpose, and good substantial food, as given at the Spring hotel—you can scarcely find better anywhere in the world.

SANITARY WOOLEN CLOTHING.

We have all heard more or less of Dr. Jaeger's Sanitary Woollen System, and now, that the opportunity is offered us, we should avail ourselves of the chance of looking into it. This system, really means the use of woollen articles of clothing all the year round, regulated, of course, according to the season. That there is much in this system, we are sure, and we feel that every physician who reads these lines should make it a point to stop at 1104 Chestnut Street and see for himself what good articles can there be found. If, by recommending certain articles of clothing to his patients, the physician can thereby add to their health

and comfort, then does it become his duty to recommend these articles. We have had the curiosity to visit this establishment, and we feel that if other physicians are impressed as we have been, they will be repaid (as will also Messrs. Scribner & Sulzer) for the visit. A very important point we note is that the lady and gentlemen attendants in the store are extremely polite, and seem very ready and willing to show and explain and answer all manner of questions, whether one means to buy or not. It is not our custom to thus so strongly speak of any articles advertised in our journal, unless we mean what we say fully, and we have here made no exception to this rule.

KIND TO THE POOR UNDERTAKER.

A man reading a newspaper in a car on the elevated road was observed to chuckle vociferously. Another man sitting alongside of him remarked:

"You seem to be very much amused?"

"You bet I am amused. I expect to rake in several thousand dollars."

"Rich relative dead and left you money?"

"Better than that. I have just read that the Board of Health is going to tear up the streets in my ward and lay new sewer pipes during this warm weather. That means typhoid fever, and I am an undertaker. I tell you, my dear sir, I don't know what we poor undertakers would do for a living if it wasn't for that Board of Health."—*Texas Siftings*.

EGYPTIAN CLIMATE.

In a letter read before a recent meeting of the Berlin Anthropological Society, Dr. Schliemann energetically protests (says the *Medical Register*) against the current belief in the salutary effect of the Egyptian climate in pulmonary troubles. He

writes from Thebes: "Since my consumptive servant, Polops, whom I had taken with me in order to save his life, has died, and since I have observed in this city a number of consumptives who, like the German Consular Agent, Tedrous, I knew twenty-eight years ago as robust men, I am entirely cured of the belief that Egypt is the paradise of consumptives, and I would much rather advise such patients to go to the Riviera than to Egypt."

A DISINFECTANT CANDLE.

From the *National Druggist* we learn that among the new and interesting devices for the prevention of the spread of disease is a medicated candle.

This device is so constructed that it burns with a steady and (for a candle) bright flame. At the same time it gives off iodine, both in the free state and combined with hydrogen or hydriodic acid. We are unable to learn the amount of iodine liberated, but it is undoubtedly regulated so that it is not injurious to human life. These goods are manufactured in England, and are also on sale in France and Germany. If as useful as claimed by the manufacturer, they will soon find a market in this country.

HYGIENE IN PUBLIC SCHOOLS.

At the Maryland State Sanitary Conference, held in Baltimore last month, (*Building*), hygiene in public schools was fully discussed. Dr. Jas. E. Green, of Baltimore county, read an interesting paper, in which he dwelt particularly upon the necessity for the adoption of advanced ideas in selecting sites for buildings, so as to obtain the best sanitary requirements in drainage, water, ventilation, shade, light, etc. He spoke in praise of the custom in some States of planting shade trees on school grounds on

arbor day. The present defects in sanitary needs produce languor and inability for steady application among the pupils, and fatigue and irritability among the teachers. He thought it would be wise to educate public opinion in these necessities, so that county commissioners could make larger appropriations without incurring the displeasure of tax-payers.

VALUE OF ADULT LIFE.

The *Sanitary News* says that in a recent article in the *Forum*, Dr. C. L. Dana places the value of an adult life to the State at at least \$750, and its annual productive power at \$95. One-half of all the deaths occur during the productive age, so that the 200,000 deaths at this period, which occur annually in the United States, represent an enormous loss to the country. He also calculates that there are in this country about 1,500,000 persons sick all the time. In England and Wales it has been found that every workingman averages a week and a half of sickness every year. It is estimated that the wage loss from sickness in France is \$70,000,000 each year, and from death, \$188,000,000.

BLOOD BUTTONS.

From 8,000 to 10,000 gallons of blood a day are used in making buttons in a large factory in Bridgeport, near Chicago. About 100 men and boys are employed in the factory. The blood must be fresh beef blood. A Mr. Hirsh was the first to introduce the business, some years ago, and is now immensely wealthy. Much of the blood evaporates in the process of drying, but the pure albumen remains. Blood sheets are used by cloth manufacturers for "setting" the color in calico goods. These sheets, broken up, will make buttons, earrings, breastpins, belt

clasps, combs, and even door knobs. There are a number of "blood" utilizing factories in England, and a blood door knob factory in Trenton, N. J.

NEW ORLEANS PRISONERS.

According to the *Med. and Surg. Reporter*, for several years the inmates of the prison in New Orleans have been suffering from a peculiar disease frequently terminating in death. The disease was generally attributed to the damp condition of the prison. A physician of the State Board of Health made an examination, and stated that the sickness was caused by insufficient food. The rations consist of a cup of tea and a piece of bread in the morning, and soup during the day. The parish authorities have been directed to provide the prisoners with better meat and with vegetables occasionally.

THE TELEPHONE AS A SOURCE OF INFECTION.

At a meeting of the Caucasian Medical Society, Dr. A. P. Astvatzatüroff, of Tiflis, drew attention (*Proceedings of the Caucasian Medical Society*, November 17th, 1886), to the danger of infection, arising from the promiscuous use of the mouth-pieces of public telephones. To prevent any accident of the kind, he recommends that the mouth-piece should be disinfected every time after, or still better, before it is used. In other words, some disinfectant fluid should be kept at every telephone station, and the speaker should, first of all, dip the mouth-piece into the fluid, and then wipe it with a clean towel.

THE CRUSADE AGAINST BOGUS BUTTER.

The Legislature of New York, at its last session, passed a law making the use

of "oleo" or any similar substance as butter, in any restaurant, boarding-house or hotel, a misdemeanor. This law also gives the Dairy Inspectors authority to enter any of these places and take samples of the butter used for table or culinary purposes, and have it analyzed. During last August copies of this law were mailed by the Dairy Commissioner to the proprietors of all places of public entertainment in the cities of the State. Since then samples have been taken from a large number of hotels and restaurants most likely to use the prohibited article. Twenty-five arrests have already been made and others are likely to follow.

THE CHOLERA QUARANTINE.

The New York Quarantine officials have adopted stringent precautions against cholera on incoming ships, in consequence of a resolution forwarded to them by the State Board of Health of Pennsylvania a few days ago requesting them to furnish every immigrant from a port where Asiatic cholera prevails with a certificate upon passing the Quarantine examination, and to notify the Secretary of the Pennsylvania Board with the name and number of every such certificate, that the local authorities here may keep them under surveillance.

HOW HE ENJOYED HIS FOOT-BATH.

A Holly, Michigan, man has just acknowledged (according to the *Chicago News*), a rare old joke of which he was the victim. Last winter he had what is known as a horrible cold, and a friend advised him to take a strong whisky toddy and soak his feet in hot water before retiring. He carried out the advice to the letter, and was having a delightful doze when his wife left him to go to bed. At 3 o'clock the next morning she awoke

to find him still dozing, while his feet were firmly held in the pail by not less than an inch of ice.

AFFLICTED WITH DIPHTHERIA.

The recent report in a daily paper that a lock-tender on the Schuylkill canal has lost three children from diphtheria and three more are supposed to be fatally ill, suggests the query, which our readers can answer, as to whether persons living along canals are specially liable to diphtheria, and if so, what are the special conditions of the surroundings and what is the season of the year when the disease is most prevalent. This is a fruitful field for observation and we would be glad to hear from our readers on the subject.

LOCAL HEALTH BOARDS IN MAINE.

At the quarterly meeting of the State Board of Health of Maine, Sept. 26, the Secretary reported that the municipal officers in all but 13 towns had made the appointment of a local board of health. There had therefore been reported to his office 432 local boards of health. Of these 19 had not yet reported their organization to the State Board as the law requires.

SANITARY CONVENTION AT OWOSSO.

The Michigan State Board of Health continues its good work of educating the public in hygiene by means of sanitary conventions in various portions of the State. The most recent of these was held at Owosso on the 22d and 23d of last month.

PERILS OF JUVENILE PARTIES.

It is stated that after a juvenile ball given by a well-known Spanish nobleman,

seventeen of the children who had been present were found to be suffering from measles, one of the little guests having only just been convalescent from that affection.

“NEARER MY GOD TO THEE.”

Marshall Wilder tells of a small boy walking down a country lane with a basket of green apples on his arm, singing “Nearer my God to Thee.”

Correspondence.

QUARANTINE DOES NOT DEAL WITH THE MOST DANGEROUS DISEASES.

Editor ANNALS OF HYGIENE:

Relative to the persons who brought scarlet fever to Sutton's Bay, Michigan, and who came on the steamship Ohio, reaching New York September 30, 1887, Dr. Wm. M. Smith, Health Officer of the Port of New York, says:

“Developed cases of diphtheria and scarlatina arriving on vessels at this port, are removed to Ward's Island. It is impossible under the law for the Health Officer or the authorities at Castle Garden to quarantine persons who have been exposed to the contagion of those diseases, consequently the sick on board vessels during the voyage, doubtless often infect the relatives or those with whom they come in contact * * * * and who carry the latent contagion to interior communities. I would be glad if the law allowed those exposed to the contagion of these diseases to be held for observation, as is the case when persons are exposed to the contagion of small-pox.”

The instance mentioned above is an illustration of what Dr. Smith says,—the child having been exposed during the voyage and taken sick with scarlet fever

the day after arrival at New York; so the infected child went on its way, to spread scarlet fever. In Michigan, at least, ten times as many deaths occur from either scarlet fever or diphtheria as from small-pox.

Is it not time that the whole subject of quarantine was investigated by the States, and by the United States Government, with a view to protecting the people of this country from the introduction of the really dangerous diseases?

HENRY B. BAKER, M. D.,
Secretary.

Office of the Secretary of the Michigan State Board of Health, Lansing, Mich.,
Nov. 3, 1887.

CONTAMINATION OF WELLS AND OF THE ATMOSPHERE.

Editor ANNALS OF HYGIENE:

I am using water from a well forty-five feet deep. My nearest neighbor has a well at a distance of two hundred feet, twelve feet deep, into which is discharged every thing from the bath-room and water-closet. The soil, not being very porous, a pump is used in this well frequently to prevent its overflowing, and the discharged material runs over a portion of my property, while the obnoxious odor pervades the atmosphere for a great distance. The above statement will apply to hundreds of cases in the small towns of our State, and you would confer a favor on many by advising me as to the danger from contamination of the water in my well, and also from living in the atmosphere thus charged, and then please give the remedy. S.

[As our correspondent so truly says that the reply to this query would prove of value to so many persons, we have requested the Secretary of our Board, Dr. Benjamin Lee, to prepare an article in reply to it, which we will publish in our next issue.—Editor ANNALS OF HYGIENE.]



